9-2016

The Effects of Appearance Schemas and Commentary on Body Image and Eating Disorder Psychopathology

Alyson C. Hermé

LOMA LINDA UNIVERSITY
School of Behavioral Health
in conjunction with the
Faculty of Graduate Studies

The Effects of Appearance Schemas and Commentary on Body Image and Eating Disorder Psychopathology

by

Alyson C. Hermé

A Dissertation submitted in partial satisfaction of
the requirements for the degree
Doctor of Philosophy in Clinical Psychology

September 2016

Each person whose signature appears below certifies that this dissertation in his/her opinion is adequate, in scope and quality, as a dissertation for the degree Doctor of Philosophy.

_____, Chairperson
Sylvia Herbozo, Associate Professor of Psychology

_____
Adam L. Aréchiga, Associate Professor of Psychology

_____
Kendal C. Boyd, Associate Professor of Psychology

_____
Jeffery Mar, Assistant Clinical Professor, Psychiatry, School of Medicine

ACKNOWLEDGEMENTS

I would like to thank my committee members, Drs. Herbozo, Boyd, Arechiga and Mar, who supported me through the proposal and defense processes, and whose feedback was indispensable to the development of this project.

To my family and friends, your support has been invaluable in seeing me through not only my dissertation, but through my doctoral program. I want to give special recognition to my parents Betty Jo and Lucas Hermé. Without your unyielding belief that I could accomplish my dreams, I would not have had the courage necessary to complete such a formidable task. Your love, strength, encouragement, and compassion has shaped the person I am today. To Erica and Lukie, thank you for your encouragement. I was not always the easiest person to get along with while completing this project, and in the nature of true sibling support, you both stood by my side while emboldening me, teasing me, and often giving me that extra little push I needed to keep me moving. I am lucky to have siblings who can mix such care and concern while simultaneously keeping me light on my feet with acts of well calculated mischief. I love you both more than words can describe.

To my partner, Seth Alt, I want to thank you for the never ending support and for all of the hours you helped pour into this project. Thank you for staying up late working on edits with me, and for tirelessly learning new concepts so you could efficiently edit my project. I will be forever grateful for your dedication. Finally, to my friends, thank you for being understanding of my dreams and goals. Thank you for cheering me on, understanding my absences, and celebrating my successes. Without friends like you this

process would have been lonely. To my friends and family all, I love you, thank you for always believing in me.

CONTENT

FIGURES

Figures Page

TABLES

Tables Page

ABBREVIATIONS

FNSW	Frequency of Negative Shape and Weight
FPSW	Frequency of Positive Shape and Weight
FPGA	Frequency of Positive General Appearance
ENSW	Effect of Negative Shape and Weight
EPSW	Effect of Positive Shape and Weight
EPGA	Effect of Positive General Appearance
ED	Eating Disorder

ABSTRACT OF THE DISSERTATION

The Effects of Appearance Schemas and Commentary on Body Image and Eating Disorder Psychopathology

By

Alyson C. Hermé

Doctor of Philosophy, Graduate Program in Clinical Psychology
Loma Linda University, September 2016
Dr. Sylvia Herbozo, Chairperson

The current study examined whether appearance investment, as well as, frequency and effect of appearance-related commentary predicted overall appearance satisfaction, body satisfaction, and eating disorder psychopathology. Appearance schemas and frequency and effect of both negative and positive shape and weight commentary were shown to be significant predictors of appearance satisfaction. Appearance schemas and effect of negative shape and weight commentary was significantly predictive of body satisfaction and eating disorder psychopathology. The study also examined differences in appearance investment levels among BMI groups, individuals who were overweight and obese had higher appearance investment than their normal weight peers. Future research should further explore the influence of appearance schemas and perceptions of appearance-related commentary on negative outcomes and identify potential areas to target in treatments for body image disturbance.

CHAPTER ONE

INTRODUCTION

Research has shown that prevalence of body image dissatisfaction has steadily risen in the United States during the past 30 years. In the last five years, two U.S. surveys assessing body image have estimated that up to 40% of women in the U.S. report dissatisfaction with their physical appearance to some extent (Fredrick et al, 2012; Fallon et al, 2014). Poor body image is also a significant problem among female adolescents where up to 80% are reporting body dissatisfaction (Chao et. al, 2008). These high rates are concerning as poor body image has been linked to negative psychological outcomes, such as eating disorder pathology (Menzel et al., 2010) and poor self-esteem (Altabe & Thompson, 1996). Appearance investment, a facet of body image, has also been associated with similar poor psychological outcomes, including body dissatisfaction (Cash, Melnyk, & Hrabosky, 2004). It is important to examine factors that influence investment in appearance in order to increase our understanding of how they perpetuate body dissatisfaction. Sociocultural influences, such as peers and family members, have been shown to impact individual's beliefs about attractiveness and appearance (Thompson, 1999). Peers and family provide feedback, often in the form of appearance-related commentary, which can influence body image. This commentary has been demonstrated to have both positive and negative effects on body image. Due to the similar negative effects of both appearance investment and appearance-related commentary, it is important to examine how they may simultaneously influence body image and eating psychopathology.

Body Image

Body image is a multidimensional construct that has been defined as an internal representation of one's physical appearance as it consists of several related aspects, including cognitions, emotions, and behaviors (Cash, 1995; Cash & Henry, 1995). The perceived discrepancy between an individual's ideal body shape and current body shape, is referred to as body dissatisfaction. Grogan (2008) has defined body dissatisfaction as an individual's negative thoughts about his or her own body. For women, the general foci of body dissatisfaction includes body weight, shape, and muscle tone (Cash, 2000). The majority of women who make evaluations about their weight will report that they are too heavy, even when they fall into the average weight class for their height (Cash, Jakatfar, & Williams, 2004).

Body dissatisfaction has steadily increased among females over the past several years. This type of dissatisfaction has become so pervasive leading some researchers to refer to such dissatisfaction as "normative discontent" (Rodin, Silberstein, & Streigel-Moore, 1985). A recent epidemiological study by Fallon, Harris, and Johnson (2014) found that 13.4% to 31.8% of all women in the United States experience some level of body dissatisfaction, with 19.6% of college aged women reporting significant levels of body dissatisfaction. Similarly, Frederick and colleagues (2012) have reported elevated levels of body dissatisfaction in approximately 20%-40% of all women. Additionally, research focusing on weight has shown dissatisfaction with weight especially among women of normal weight. For example, Neighbors and Sobal (2007) found that up to 87% of college females with weight falling in the normal range had a strong desire to weigh less. Of particular note, Chang and Christakis (2003) reported that 38% of normal

weight women believed that they were overweight. There is also strong evidence supporting the prevalence of body dissatisfaction in adolescents. Lawler and Nixon (2011) found that 80.8% of adolescent girls reported experiencing some form of body dissatisfaction. Again, these high rates of body dissatisfaction demonstrate that it is a significant concern, especially among college aged women.

Body dissatisfaction has been shown to contribute to a variety of psychosocial and health problems. More generally speaking, body dissatisfaction is related to the desire to alter one's shape and weight (Ricciardelli & McCabe, 2001; Wood, Becker, & Thompson, 1996). Such dissatisfaction is associated with feelings of low self-esteem (Riccciardelli & McCabe, 2001) and emotional distress (Johnson & Wardle, 2005), depression (McCreary & Sasse, 2000; Seigel, 2002), cosmetic surgery and steroid use (Hoffman & Brownell, 1997; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), and eating disorders (Stice, Presnell, & Spangler, 2002). Individuals with high levels of body dissatisfaction are also at a higher risk for developing social anxiety, sexual difficulties, depression, and eating disturbances (Cash et. al, 2005). Furthermore, body dissatisfaction has been shown to have long lasting negative effects over extended periods of time. Longitudinal studies suggest that body image disturbances such as body dissatisfaction act as precursors to the development of disordered eating, and can perpetuate the continuance of such behaviors (Cash, 2000; Cash, 2002; Loth, 2014). In a study conducted by Loth and colleagues (2014), adolescent females with low body satisfaction at baseline reported persistent dieting behaviors at the 10 year follow-up period. These studies have illustrated that poor body image may lead to negative psychosocial and physical outcomes.

Eating Disorder Psychopathology

The strong relationship between body image disturbance and disordered eating is well established. One such example is the association between body dissatisfaction and dieting behaviors in adolescent females (Matera, Nerini, & Stefanile, 2013; Sharpe, Damazer, Treasure, & Schmidt, 2013). These eating patterns in conjunction with body dissatisfaction are important to consider because they have the potential to develop into more severe problems such as eating disorders. Research has shown that approximately 10% of college women exhibit pathological levels of body preoccupation (Klemchuk, Hutchinson, & Frank, 1990), and 25.9% are engaging in dieting and disordered eating patterns in order to change their body's shape and weight (Evans, Tovée, Boothroyd, & Drewett, 2013; Ferreiro, Seoane, & Senra, 2014; Forney & Ward, 2013; Francisco, Narciso, & Alarcão, 2013; Griffiths, Angus, Murray, & Touyz, 2014; Rayner, Schniering, Rapee, & Hutchinson, 2013). These studies suggest that women who are dissatisfied with their bodies are more likely to engage in unhealthy eating behaviors.

Eating disorders are psychological disorders that are characterized by maladaptive eating patterns and negative views concerning appearance including body dissatisfaction. Swanson and colleagues (2011) found that among females, .3% met criteria for anorexia nervosa, 1.3% met criteria for bulimia nervosa, and 2.3% met criteria for binge eating disorder. While these percentages may seem low in the overall population, eating pathology has high levels of mortality despite low prevalence rates (Pomeroy, 2004). Individuals with eating disorders have a higher risk for developing chronic fatigue, chronic pain, and cardiovascular symptoms, and often exhibit many physical symptoms

such as insomnia, headaches, abdominal pain, amenorrhea, parotid gland swelling, erosion of dental enamel, bradycardia, low blood pressure, periodontal disease, and neurological symptoms (Johnson, Cohen, Kasen, &Brook, 2002; Pomeroy 2004). High rates of engagement in dieting and disordered eating practices coupled with the high morbidity rates of eating disorders demonstrate that these behaviors can lead to disorders that are a serious issue with detrimental outcomes.

Both cross-sectional and longitudinal research studies have reported various factors that are predictive of disordered eating and dieting. Many of these studies have focused on examining the development of disordered eating habits (Annis, Cash, & Hrabosky, 2004; Chang, Jarry, & Kong, 2014; Engeln-Maddox, Salk, & Miller, 2012; Ferreiro, et al., 2014; Furman & Thompson, 2002; Lunner et al., 2000; Matera, et al., 2013; Menzel, et al., 2010). Stice (2002) conducted a meta-analysis of risk and maintenance factors contributing to the onset of eating disorder psychopathology which indicated that thin-ideal internalization, elevated body mass, body dissatisfaction, and perceived pressure to be thin are risk factors. Maintenance factors contributing to sustaining eating disorder psychopathology included negative affect, dieting, perfectionism, impulsivity. Moreover, a recent longitudinal study by Loth (2014) examining predictors of disordered eating found that weight concerns, weight importance, depressive symptoms, and body satisfaction during adolescence, were each predictive of disordered eating up to ten years later. Further research has reported additional predictors including: self-esteem (Gardner Stark, Friedman, Jackson, 2000; Heatherton, Mahamedi, Striepe , 1997; Shisslak, Crago, McKnight, 1998), depressive symptoms (Loth, 2014; Beato-Fernández, Rodríguez-Cano, Belmonte-Llario, Martínez,

2004) and fear of negative evaluation (Watson & Friend, 1969; Levinson and Rodebaugh, 2012; Gilbert & Meyer, 2005).

Sociocultural Theory

A number of theories have been proposed to explain the development of body image and eating disturbance. The sociocultural theory in this area has received a vast amount of research support. This theory posits that in Western cultures, sociocultural influences such as peers, family, and media, place pressures on women to be thin and such pressures subsequently contribute to body dissatisfaction (Levine & Smolak, 1996; Powell & Kahn, 1995; Sypeck et. al. 2006; Thompson et al., 1999; Tiggerman & Rothblum, 1988). From these sources, individuals can receive messages regarding societal standards of physical attractiveness and ideal body shapes which are often internalized at ages as early as childhood (Jung & Lennon, 2003; Sinton & Birch, 2006). Westernized media, in particular, tends to portray the ideal female body at a level of thinness which is not obtainable for the majority of women (Evans, 2003). In such media, thinner women are viewed as more attractive, more successful, and more intelligent than their counterparts of larger body shapes and heavier weights (Evans, 2003; Hebl & Heatherton, 1998; Gilbert, 1998).

Media portrayals promoting an unrealistic thin-ideal have been linked to several negative effects such as body dissatisfaction. Glauret and colleagues (2009) found that women exposed to images of thin women (BMI <15) changed what they considered normal and ideal to a thinner body. It has also been noted that higher internalization of or investment in Western ideals leads to a greater discrepancy concerning one's actual

weight in comparison to the cultural ideal (Glauert et. al, 2009, Gardner & Boice, 2004; Dunkley et. al, 2001). Such ideal body shapes have been shown to contribute to the pervasive dieting behaviors and body image concerns observed in both adolescent and young adult women (Dunkley et, al, 2001). The internalization and acceptance of a thin ideal as norm is of concern, as it remains nonviable for a majority of women and it attributes positive characteristics to unattainable body shapes.

Of equal importance to the media are the roles of family and peers on the development of body image. Research indicates that parents, siblings and peers have significant influences on body image dissatisfaction (Dunkley et al. 2001; McCabe and Ricciardelli 2001; Coober & King, 2008). Sociocultural theory argues that the family environment may promote the Western ideal through direct feedback and modeling (McCabe and Ricciardelli 2005; Wertheim et al. 1997; Wertheim et al 2004). Direct feedback refers to when an individual receives feedback from others such as parents and siblings about his/her physical appearance, body shape and/or eating behaviors (Wertheim et al 2004, Coomber & King, 2008). Similar direct feedback can also be received from different sources such as peers, romantic partners, and even strangers. Modeling behavior is exhibited when one displays negative attitudes or concerns about one's own body while also engaging in weight loss behaviors (Wertheim et al 2004). For instance, with both modeling and direct feedback, sisters have been shown to facilitate the internalization of the thin ideal as much as mothers (Coomber & King, 2008). Thus, family members can influence their relatives' body image via modeling and direct feedback in areas pertaining to appearance and eating behaviors.

The negative effects of such sociocultural messages have been demonstrated in numerous studies. Research has shown that in college women, the pressure to be thin is associated with body image dissatisfaction and disordered eating (Moreno and Thelen, 1993). Parental pressure to be thin, in particular, expressed through direct commentary has been identified as a strong predictor of body image dissatisfaction and disordered eating in daughters (Wertheim et al., 2004). Further, in a longitudinal study by Jones (2004) appearance focused conversations and open social comparison among peers was linked to increased body dissatisfaction in adolescent girls. Body dissatisfaction and disordered eating are potential negative effects of messages from peers and parents.

Appearance Investment and Schemas

Body image is comprised of an evaluative component and a cognitive component. The evaluative component is often described as appearance evaluation and refers to an individual's feelings of physical attractiveness or unattractiveness regarding one's appearance (Cash, 2000). This is also commonly known as an individuals' appearance satisfaction or dissatisfaction. It is this evaluative component that reflects the extent to which individuals view their current body and how it compares to their body ideal (Cash, 2002). In contrast, the second cognitive component of body image is described as appearance investment which refers to the importance that an individual places on his/her appearance and behaviors. This is particularly significant in that it reflects an emphases on appearance (Cash & Labarge, 1996; Cash, Melnyk, et al., 2004). This cognitive component is the extent to which individuals not only place importance on their appearance but also engage in behaviors associated with such as attending to their

appearance and engaging in extensive grooming behaviors (Cash, 2004). Both appearance evaluation and appearance investment are important components of body image that likely influence body satisfaction.

Appearance investment is based on schemas related to one's appearance. Schemas are cognitive generalizations that one develops about oneself and which facilitate the organization and processing of self-related information (Jung & Lee, 2006; Jung & Lennon, 2003; H. Markus, 1977). Self-related information is perceived as central to the way individuals observe themselves. When such information is received, it is organized to see how it fits into the individual's schemas of himself/herself (H. Markus & Nurius, 1986), and it guides the individual's behavior through self-regulation. These schemas develop from an individual's history of both social and personal experiences as they fall into various categories within an individual's mind, allowing for easy access to the organized information. These schemas are important in how they systematize defining characteristics in the self.

Within the realm of body image, appearance schemas are a cognitive of body image that refer to an aspect of the self-concept, where the self is represented in terms of appearance (Cash, 2005). Due to the evaluative, emotional, and regulatory effects of appearance schemas, they become a crucial part of understanding how one experiences body image in everyday life (Cash, Melnyk, et al., 2004), especially where it concerns the importance of meaning placed on appearance (Cash & Labarge, 1996). Cash et al. (2004) argue that these appearance schemas are central to interpreting experiences, such as how individuals may view their body in the environment, and how they interpret others' views of their body. Further, individuals' appearance schemas can be negative or

positive. Negative appearance schemas may include thoughts indicating an excessive awareness of and emphasis on one's appearance whereas positive appearance schemas may include thoughts reflecting acceptance and appreciation of one's body.

The potential negative role of appearance schemas on body image has been shown in previous research. Several studies have found that poor appearance schemas are associated with body dissatisfaction (Altabe & Thompson, 1996; Fisher, Dunn, & Thompson, 2002; Geller, Johnston, & Madsen, 1997; Labarge, Cash, & Brown, 1998). Further studies have reported that women with elevated levels of appearance investment experience greater distress than women with low levels when placed in situations that trigger appearance concerns (Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002; Cash, Melnyk, et al., 2004). These situations include events such as clothes shopping with others, formal dress, and other social occasions. Additionally, in a longitudinal study, Hargreaves and Tiggemann (2002) found that appearance schemas predicted body dissatisfaction over a two year period in college women. Appearance schemas have been shown to influence body dissatisfaction by heightening focus on, recollection of, and assimilation of appearance relevant messages (Altabe and Thompson, 1996; Geller et al., 1997; Hargreaves and Tiggemann, 2003; Lavin and Cash, 2001). Such schemas can also consist of cognitive bias about appearance that may contribute to the onset of negative outcomes such as body dissatisfaction and disordered eating (Williamson, Muller, Reas, & Thaw, 1999). Appearance schemas are important to consider when examining the various factors that affect body image, as they act as a roadway for organizing thoughts and emotions related to one's physical appearance.

Appearance investment has been divided into two domains, self-evaluative salience (SES) and motivational salience (MS). SES is viewed as the extent to which one's self-concept and self-worth are based on one's own view of their physical appearance (Cash, 2002; Cash, 2005; Cash, Melnyk, et al., 2004). This includes beliefs that appearance is instrumental in causing both emotional and social experiences (Cash, 2002; Cash, 2005; Cash, Melnyk, et al., 2004). Individuals who have high SES appearance investment are more inclined to closely link their experiences in the world and their self-worth to how they view their own physical appearance. MS refers to the attitudes and behaviors that are related to one's efforts directed at maintaining and improving one's physical appearance (Cash, Melnyk, et al. 2004). Individuals who have high MS appearance investment tend to be focused on upkeep behaviors, such as maintaining good attire, polished nails, and hairstyles, which are intended to sustain a particular type of appearance. While such individuals typically do not tie these behaviors to beliefs about their self-worth, they still spend copious amounts of time focusing on their appearance. Historically, MS has been considered to be slightly less dysfunctional than SES (Cash, Melnyk, et al., 2004) with the crucial difference between these two constructs of appearance investment being MS may not be quite as pathological as SES. More specifically, if the main goal of MS is only to maintain a certain level of attractiveness, then MS is likely not as dysfunctional as SES (Cash 2004). In other words, an individual's concerns about his/her appearance may not be problematic if they are independent from one's self-worth. It is when one's concerns about his/her appearance ties into self-worth and becomes dependent on maintenance behaviors that MS can become detrimental.

Several studies have indicated that SES is associated with more psychological outcomes than MS. SES has been linked to negative appearance evaluation (Chang, et al., 2014), eating disorder psychopathology (Cash, Melnyk, et al., 2004; Chang, et al., 2014), internalization of societal/media ideals of appearance (Boersma & Jarry, 2013; Cash, Melnyk, et al., 2004; Ip & Jarry, 2008), less enjoyment in clothes shopping (Tiggemann & Lacey, 2009), body image quality of life (Cash, Melnyk, et al., 2004; Melnyk, Cash, & Janda, 2004), poor self-esteem (Cash, Jakatdar, et al., 2004; Cash, Melnyk, et al., 2004), and social self-presentational perfectionism (Cash, Melnyk, et al., 2004). While SES has been the prominent appearance schema associated with these problems, MS has recently also been positively correlated with poor body image (Cash, Phillips, Santos, & Hrabosky, 2004), lower appearance self-esteem (Ip & Jarry, 2008), dietary restraint (Lamarche & Gammage, 2012), and intentions to engage in pre-wedding practices including exercise, eating, and appearance-related behaviors (Prichard & Tiggemann, 2011). These studies have provided evidence suggesting that both types of appearance investment are related to body image disturbance and eating psychopathology.

Among women high in general appearance investment, self-worth is often based on their body shape and weight (Cash & Labarge, 1996). Forand and colleagues (2010) found that when examining appearance investment and interaction with others, women who were high in appearance investment were more sensitive to perceived communion (i.e. warmth, and friendliness). Particularly, when communion was perceived as low (i.e. not friendly), the interactions were associated with negative mood and poor self-esteem. On the other hand, when communion was perceived as high, women with high appearance investment reported positive moods and higher self-esteem. Individuals with

high appearance investment who base their self-worth off of their appearance are likely to be highly aware of how others view them. These individuals may evaluate their self-worth based on many of their interactions with others, including non-appearance related commentary which is attributed back to their appearance. Women that are high in appearance investment may experience more distress from others' feedback and have a higher susceptibility to negative reactions.

There have only been a few studies that have examined the relationship between appearance investment and body mass index (BMI). These studies have primarily focused on youth including children and adolescent females. A longitudinal study by Clark & Tiggeman (2008) found that higher BMI, higher appearance schemas, higher internalization of appearance ideals, and lower autonomy, all correspondingly predicted worsening body image after one year in school aged girls. Results showed that girls with higher BMI had greater propensities for internalizing appearance ideals and schemas and this internalization was linked to lower body esteem and higher desire to be thin (Clark & Tiggemann, 2008). Further, in a study with adolescent girls who did not disclose their weight, missing weight status (non-disclosure) was associated with poorer body image and greater investment in appearance (Tiggemann 2006). This missing information in the form of a refusal to disclose weight was described as motivated non-responding. More specifically, those who did not disclose their weight were seen as having felt better about not reporting this information. In this study, this behavior was correlated with higher appearance investment. Thus, the presence of high appearance investment and the absence of weight information suggest discomfort with the idea of disclosing such information.

To my knowledge, only a few studies have investigated appearance investment and BMI. Tiggemann & Lacey (2009) found no relationship appearance investment and BMI in women ranging from young adulthood to mid-adulthood. However, in the scale development study for the Appearance Schemas Inventory-Revised, Cash (2004) noted that BMI was modestly and positively correlated to responses on the self-evaluative salience factor of appearance investment. This indicated that the higher BMI values were associated with higher levels of attributing appearance as a main factor for self-worth. Given the limited research on appearance investment and weight status, additional studies are needed, especially with college women who are known to have high levels of body dissatisfaction.

Appearance-related Commentary

Given that high appearance investment is associated with attributing one's appearance to self-worth, appearance-related feedback may be a medium that is used to make judgments about the self. Different types of appearance-related feedback have been identified. Appearance-related commentary is generally described as verbal appearance-related feedback, where individuals are directly provided with information concerning the acceptability of their physical attributes as well as how others view them (Schwartz, Phares, Tantleff-Dunn, & Thompson, 1999). Nonverbal appearance-related feedback refers to more subtle, indirect forms of feedback such as facial expressions (e.g., eye rolling, staring up and down) and gestures (Tantleff-Dunn, Thompson, and Dunn, 1995). Sources of appearance-related feedback most frequently include parents, peers, strangers, and romantic partners, all of which are considered strong interpersonal influences

(Smolak, 2004; Smolak & Levine, 2001; Thompson, Herbozo, Himes, & Yamamiya, 2005). Past research has found that feedback on physical appearance, especially weight-based teasing, may contribute to body image and eating disturbances (Lieberman, Gauvin, Bukowski, & White, 2001; Menzel, et al., 2010; Thompson & Coovert, 1999; Van den Berg, Wertheim, Thompson, & Paxton, 2002).

Two categories of verbal appearance related commentary have been studied. These categories include negative appearance-related commentary (e.g., weight-based teasing) and positive appearance-related commentary (e.g., compliments). Teasing is considered a form of negative appearance-related commentary where the intention is make fun of or embarrass an individual. In such commentary, there is often an element of degradation where the intent is to humiliate an individual with respect to their appearance (Cash, 2005; Furman & Thompson, 2002). The most common type of teasing with regards to physical appearance is weight-based teasing (Liang, Jackson, McKenzie, Vicki, 2011). Other types of negative appearance-related commentary may be less harsh when compared to teasing but still include feedback with potentially harmful content. Examples of such commentary may include "You need to lose weight", or, "Your outfit is not flattering." With regards to positive commentary, such commentary has a complimentary nature to it given that it includes feedback with positive content. Examples of this type of commentary may include "You are very pretty" or "You look like a model." Unlike negative appearance-related commentary, positive commentary is often intended to make the recipient feel good about his/her physical appearance.

Research on appearance-related commentary has primarily focused on the frequency and effect of such commentary. The frequency of appearance related

commentary refers to the amount and occurrence of comments received (e.g. never, sometimes, always). In contrast, the effect of appearance-related commentary refers to how the individual receiving the commentary responds to the feedback (e.g. in a positive or negative manner). There is a breadth of research that has examined the influence of teasing frequency on body image disturbance, disordered eating and self-esteem. Studies have found that that greater teasing frequency of teasing is linked to poorer body image, poor self-esteem and more disordered eating behaviors in various populations, including adolescent females and college-aged women (Cash, 1995; Lunner, et al., 2000; Thompson, Anderson, Breshanan & Deangelis, 2014; Lieberman, et al., 2001; Van den Berg, et al., 2002; Gleason, Alexander, & Somers, 2000;). Even more so, there have been studies indicating that greater frequency of nonverbal feedback concerning appearance (e.g, staring, eye rolling, looking up and down) are also associated with negative outcomes, such as body dissatisfaction, eating disturbance, and low self-esteem (Cattarin & Thompson, 1994; Gleason, et al., 2000; J Kevin Thompson, et al., 1995).

Thompson and colleagues (1995) developed the Perception of Teasing Scale (POTS) for the purpose of assessing the effects of appearance-related teasing. When appearance-related teasing was perceived as negative/harmful, it was found to be predictive of poor body image and eating disturbance. Further, Cash (1995) noted that 71% of women reported feeling that teasing in childhood and adolescence was distressing. It was also reported that such teasing impacted women's current body image, particularly when the teasing was ongoing. In more recent years, teasing concerning body shape and weight has continued to be received as poorly and thus has shown negative psychological and emotional consequences (Liang, Jackson, McKenzie, 2011; Puhl &

Brownell, 2001; Taylor, 2011). Liang and colleagues (2011) found that when examining childhood and adolescent teasing in adult women, those who reported high teasing frequency also indicated that receiving appearance-related teasing was highly upsetting. There is an existing link that establishes that both teasing frequency and effect have been related to disordered eating and body dissatisfaction.

Numerous studies have shown a strong association between negative appearance-related commentary during childhood (teasing) and body image dissatisfaction in adulthood. Longitudinal studies have demonstrated that teasing about appearance may lead to the development of negative body image and eating problems (Barker & Galambos, 2003; Wertheim, Koerner, & Paxton, 2001). In a three-year longitudinal study of adolescent girls between 7th and 10th grade, frequency of appearance-related teasing was related to the onset of body dissatisfaction (Barker & Galambos, 2003). Further, in a study examining 7th grade females, over the course of 16 months, the effect of weight-related teasing was predictive of increased restrictive eating and bulimic tendencies (Wertheim, Koerner, & Paxton, 2001). Specifically, it was a more negative response to such teasing that contributed to the disordered eating behaviors. These findings provide strong evidence that negative appearance-related commentary received over extended periods of time can lead to negative body image and eating disturbance in females.

Research on appearance-related feedback has been expanded to examine the effects of positive appearance-related commentary on body image. Initial findings have indicated that a higher frequency of positive shape and weight comments are related to greater body dissatisfaction in college aged women (Bailey & Ricciardelli, 2010; Herbozo & Thompson, 2006a). There is also evidence demonstrating the importance of

understanding the manner in which positive shape and weight appearance-related commentary are interpreted and processed in addition to the frequency of experiencing such commentary (Herbozo & Thompson, 2006a). Herbozo & Thompson (2006a) found that women who had poorer appearance evaluation rated positive shape and weight - related comments as having a negative effect on them. Additionally, negative effects of positive general appearance commentary were associated with less appearance satisfaction, poor body satisfaction, and poor self-esteem. Significantly, negative effect from positive commentary was found in individuals that were high in appearance investment and endorsed low self-esteem.

Other research has shown that even when positive commentary about shape and weight is interpreted in a positive manner, it may still result in negative outcomes. The positive impact of positive appearance related commentary was shown to increase body surveillance and body dissatisfaction in college women (Calogero, Herbozo, & Thompson, 2009). This effect has been termed *complimentary weightism,* and it refers to the notion that "receiving appearance compliments, even when experienced as positive by the target, are unlikely to have a beneficial impact on body-related outcomes in women" (Calogero, Herbozo, & Thompson, 2009). Calogero and colleagues further explored the area of positive impact regarding appearance-related compliments and argued that receiving positive compliments informs women receiving compliments that they are being appraised and esteemed based solely on their appearance. In a similar study, Fea & Brannon (2006) found women with high levels of self-objectification, temporarily felt better when receiving a character or appearance compliment, but overtime felt high levels of overall objectification. Overall, these findings suggest a potential negative impact of

positive commentary highlighting the need to further understand the occurrence and interpretation of positive commentary related to body dissatisfaction and eating disorder psychopathology.

While some research has demonstrated the negative effects of positive appearance-related commentary, other research has shown that greater frequency of such commentary is associated with positive body image (McLaren-, et al., 2004; Rodgers, et al., 2009). Rodgers and colleagues (2009) found that in an overall mediational model, positive appearance-related commentary from parents was negatively related to body dissatisfaction. They argued that this may suggest positive comments provided from parents can act as protection against body dissatisfaction. However, in the same study, it was found that positive appearance-related commentary from parents was related to increased levels of disordered eating. McLaren and colleagues (2004) examined body-related comments across the lifespans of older female adults and found that negative comments received in adolescence had a negative effect on body esteem in adulthood. Gross and Nelson (2000) also reported that higher perceptions of positive messages regarding body shape and eating were associated with higher body satisfaction among college women. These mixed findings underscore a need to further explore the effects of positive commentary in college women on a variety of psychological outcomes, including body dissatisfaction and eating disorder psychopathology.

Recent research has begun to examine the frequency of positive appearance-related commentary among different weight groups. Herbozo and colleagues (2013) found that overweight and obese college women received fewer positive shape and weight commentary when compared to normative and underweight college women.

Furthermore, obese women received the least amount of positive shape and weight commentary of all weight groups, whereas normal weight and underweight individuals received the highest amount of positive shape and weight comments. Furthermore, research has indicated that the relationships between the occurrence of positive appearance-related commentary, body image, and self-esteem each vary by weight group. Regardless of weight status, more positive shape and weight comments have been associated with less body dissatisfaction (Herbozo, et al., 2013; Rodgers, et al., 2009). For normal weight individuals, less negative and more positive appearance-related feedback was shown to be related to higher self-esteem (Herbozo & Thompson, 2009). Finally, higher frequencies of general positive appearance-related commentary have been correlated with higher shape and weight concerns (Herbozo, Menzel Thompson, 2013). There may be other important factors that influence body image, and additional research is needed to understand what variables are contributing to these mixed findings within weight status groups. It is especially important to examine appearance-related commentary, as positive commentary has been shown to be correlated with levels of distress that are similar to negative appearance-related commentary (Herbozo & Thompson, 2010).

Current Study

In daily interactions, appearance-related feedback, such as compliments and criticisms of one's physical appearance, are common experiences that can negatively affect some individuals' body image and eating behaviors. Appearance-related commentary can be processed and interpreted through the use of appearance schemas

which help individuals process information regarding appearance from their environment. High levels of negative appearance schemas, in particular, are problematic as they may contribute to higher levels of appearance investment. To date, the relationship between appearance investment and appearance-related commentary has received limited research attention, especially with regards the processing of such information. It is possible that women with high appearance investment may be more affected by appearance-related commentary since they tend to place greater importance on their appearance and are more attuned to how others view them.

Appearance investment may also be dependent on weight status. Although only a few studies have examined BMI in the context of appearance investment, there is initial evidence suggesting that there may be potential weight group differences in appearance investment. Specifically, higher BMI groups have shown higher levels of appearance investment (Cash, 1995; Clark & Tiggemann, 2008). Given the high prevalence of body dissatisfaction in women, additional research aimed at increasing our understanding of how factors, such as appearance investment and weight status, influence poor body image and eating disorder psychopathology are needed. The current study seeks to examine appearance investment, frequency and effect of appearance-related commentary (negative shape and weight commentary, positive shape and weight commentary, and general positive appearance commentary), as predictors of appearance evaluation, body areas satisfaction, and eating disorder psychopathology. Secondly, this study seeks to explore potential differences among weight status groups (i.e. underweight, normal weight, overweight, and obese) in appearance investment.

Aims

The proposed study includes five aims with a total of twelve hypotheses.

Aim 1: To examine the association of appearance investment with frequency of appearance-related commentary, effect of appearance-related commentary, body image, and eating disorder psychopathology.

Hypothesis 1a. Higher levels of appearance investment will be related to higher levels of the frequency of negative weight and shape commentary and higher levels of the negative effect of negative weight and shape commentary.

Hypothesis 1b. Higher levels of appearance investment will be related to lower levels of the frequency of positive weight and shape commentary, higher levels of the negative effect of positive weight and shape commentary.

Hypothesis 1c. Higher levels of appearance investment will be related to lower levels of the frequency of positive general appearance commentary, higher levels of the negative effect of positive general appearance commentary, lower levels of appearance satisfaction and body satisfaction, and higher levels of eating disorder psychopathology.

Aim 2: To examine the appearance investment and the frequency of appearance-related commentary as predictors of body image (appearance satisfaction and body satisfaction).

Hypothesis 2a. Higher levels of appearance investment and higher levels of the frequency of negative weight and shape commentary received will predict lower levels of body satisfaction and appearance satisfaction.

Hypothesis 2b. Higher levels of appearance investment and lower levels of the frequency of positive weight and shape commentary received will predict lower levels of body satisfaction and appearance satisfaction.

Hypothesis 2c. Higher levels of appearance investment and lower levels of the frequency of positive general appearance commentary received will predict lower levels of body satisfaction and appearance satisfaction.

Aim 3: To examine the appearance investment and the effect of appearance-related commentary as predictors of body image.

Hypothesis 3a. Higher levels of appearance investment and higher levels of the negative effect of negative weight and shape commentary will predict lower levels of appearance satisfaction and body areas satisfaction

Hypothesis 3b. Higher levels of appearance investment and higher levels of the negative effect of positive weight and shape commentary will predict lower levels of appearance satisfaction and body satisfaction.

Hypothesis 3c. Higher levels of appearance investment and higher levels of the negative effect of positive general appearance commentary will predict lower levels appearance satisfaction and body satisfaction.

Aim 4: To examine appearance investment and the effect of appearance-related commentary as predictors of eating disorder psychopathology.

Hypothesis 4a. Higher levels of appearance investment and greater negative effect of negative weight and shape commentary will predict of higher levels of eating disorder psychopathology.

Hypothesis 4b. Higher levels of appearance investment and greater negative effect of positive weight and shape appearance commentary will predict higher levels of eating disorder psychopathology.

Hypothesis 4c. Higher levels of appearance investment and greater negative effect of positive general commentary will predict higher levels of eating disorder psychopathology

Aim 5: To explore potential differences among weight status groups (i.e. underweight, normal weight, overweight, and obese) in appearance investment. No hypothesis will be proposed for this aim due to limited research in these areas.

CHAPTER TWO

METHODS

Participants

Participants included 321 female undergraduate students from the research subject pools at three undergraduate universities. These universities included California State University-Dominquez Hills (*n* = 134), La Sierra University (*n* = 78), and California Baptist University (*n* = 109). The sample consisted of females between the ages of 18 to 26 years (*M* = 19.31, *SD* = 1.42) with body mass indexes ranging from 15.41 to 48.06 (*M* = 24.49, *SD* = 4.89). Sixty-six (20.6%) of participants were Caucasian, 170 (53%) were Hispanic or Latino, 32 (10%) were Asian, 29 (9%) were African American/Black, 9 (2.8%) identified as American Indian or Alaskan Native, 4 (1.2%) as Native Hawaiian or other Pacific Islander, and 11 (3.4%) reported *Other*. This sample size was identified by g-power analysis software (Faul, Erdfelder, Lang, & Buchner, 2007) as sufficient for determining significant findings (power =.80; α=.05) with the proposed statistical analysis.

Procedure

Participants were recruited from undergraduate subject pools at three universities in California. Information about the research study was posted on each department website for research studies. Participants were directed to an online survey in which they responded to a series of questionnaires. They were first presented with an electronic informed consent document which included contact information for the primary investigator to address any questions and concerns, and/or to request results of the study.

Upon agreeing to participate in the study, participants proceeded to the online survey. All participants received credit for a psychology course as compensation for their participation.

Measures

Demographic Information

Participants were asked to provide demographic information including age, height, weight, ethnicity, school attended, and year in school. The reported height in inches and the weight in pounds were used to calculate the body mass index (BMI) of the participants.

Body Mass Index (BMI)

BMI was calculated using the English formula which is the ratio of weight (in pounds) to squared height (in inches) multiplied by 703. This measurement is frequently used as a variable in body image research to account for the effects of body mass. Higher BMI values represent higher levels of body mass (Garrow & Webster, 1985).

Appearance Investment

Appearance Schemas Inventory-Revised (ASI-R) (Cash & Labarge, 1996; Cash, Melnyk, et al., 2004; Appendix A) is a 20-item measure used to assess participants' investment in terms of core beliefs and assumptions regarding the importance, meaning, and influence of physical appearance in everyday life. This measure consists of two subscales: Self-Evaluation Salience and Motivational Salience. The Self-Evaluation

Salience measures the belief that one's appearance is important in determining self-worth and life experiences. Motivational Salience measures the importance and desire to maintain and enhance one's physical appearance. The items are rated on a 5-point Likert scale that ranges from *strongly agree* to *strongly disagree*. The ASI-R total scale and subscales have demonstrated adequate internal consistency (α=.82-.91; Cash, Melnyk, et al., 2004). In the current study, the ASI-R total scale and subscales demonstrated adequate internal consistency (α=.80-.87).

Appearance-Related Commentary

The Verbal Commentary on Physical Appearance Scale (VCOPAS; Sylvia Herbozo & Thompson, 2006b; Appendix B) is a 21-item scale that assess both the frequency and effect of physical appearance related commentary. This scale has three subscales that include the Negative Weight and Shape, Positive Weight and Shape, and Positive General Appearance. The Negative Weight and Shape subscale measures body-related comments that are considered to be negative in content (e.g., offensive). The Positive Weight and Shape subscale also measures body-related comments, but these comments have content that is viewed as positive (e.g., flattering). The Positive General Appearance subscale assesses comments related to overall physical appearance which are positive in content.

Participants are asked to first provide a frequency rating wherein they indicate how often they received each listed comment using a five-point Likert scale from *never* (1) to *always* (5), in a period of the "last two years." Higher scores indicate greater occurrence of the commentary. Unless participants report that they have *never* received a

particular comment, they are asked to report how positively or negatively they experienced each listed comment using a five-point Likert scale from *very positive* to *very negative*. Higher scores reflect a more negative reaction to the commentary. For instance, a positive weight and shape-related comment with an effect rating of 5 would indicate that the participant experienced the comment as very negative. Effect scores are only taken into consideration if they are relevant (i.e., if the respondent indicated a response other than *never*). If an individual did not experience a certain comment, no effect score is reported. Overall, effect scores for each subscale are calculated by dividing the total effect score by the number of frequency comments endorsed (e.g. if 4 frequency items were rated affirmatively, the total effect score would be divided by 4, resulting in a mean score). This quantification strategy has been used previously for effect scores (Thompson, Fabian, Moulton, & Dunn, 1991).

The frequency components of the VCOPAS subscales have shown adequate consistency as follows: Negative Weight and Shape (α =.91), Positive Weight and Shape (α =.72), and Positive General Appearance (α =.82) (Herbozo & Thompson, 2006b; Herbozo & Thompson, 2013). Test-re-test reliabilities for the subscales were also adequate (α = .78-.89; Herbozo & Thompson, 2006b). In the current study, the frequency components of the VCOPAS subscales showed adequate consistency as follows: Negative Weight and Shape (α =.90), Positive Weight and Shape (α =.78), and Positive General Appearance (α =.70). The effect components of the VCOPAS subscales also showed adequate consistency as follows: Negative Weight and Shape (α =.90), Positive Weight and Shape (α =.69), and Positive General Appearance (α =.82).

The Multidimensional Body Self-Relations Questionnaire

The Multidimensional Body Self-Relations Questionnaire, Appearance Scales (MBSRQ-AE; Brown, Cash, & Mikulka, 1990) is a 16-item self-report inventory for the assessment of self-attitudinal aspects of body image. The appearance scales in this measure include appearance evaluation, appearance orientation, overweight preoccupation, self-classified weight status, and body areas satisfaction scale. The two scales being used for the current study include, Appearance Evaluation (AE) and Body Areas Satisfaction Scale (BASS).

Appearance Satisfaction

The MBSRQ-AE (Appendix C) is a 7-item subscale that assesses global satisfaction of appearance using a five-point Likert scale which ranges from *definitely disagree* to *definitely agree*. Higher scores indicate more satisfaction with one's overall appearance. This scale has shown adequate internal consistency (α = .88) and good one-month test retest reliability (.91; Cash, 2000a). It has also shown good validity across studies (Brown, Cash, & Mikulka, 1990; Cash, 1994; Cash, Winstead, & Janda, 1986). In the current study, the MBSR-Q showed strong internal consistency (α = .89).

Body Satisfaction

The BASS (Appendix D) is a 9-item subscale that assesses satisfaction with discrete aspects of one's appearance using a five-point Likert scale, which ranges from *definitely disagree* to *definitely agree*. Higher scores indicate content with most body areas whereas lower scores reflect dissatisfaction with size or appearance of several body

areas. This scale has shown adequate internal consistency (α = .77) and good one-month test retest reliability for month (.86; Cash, 2000). In the current study, the BASS showed strong internal consistency (α = .84).

Eating Disorder Psychopathology

The Eating Disorder Examination Questionnaire (EDEQ; Fairburn & Beglin, 1994; Appendix E), is a 36-item Self-report version of the Eating Disorder Examination (EDE) which measures the occurrence of features often associated with eating disorders in the past 28 days. The measure includes four subscales: Dietary Restraint, Eating Concern, Weight Concern and Shape Concern. All subscales will be used for the present study. The EDE-Q has demonstrated adequate internal consistency (subscales α=.79–92) and test-retest reliability (Luce & Crowther, 1999). The EDE-Q has also shown high convergent validity with the EDE (Kalarchian et al., 2000; Mond, Hay, Rogers, Owen, & Beumont, 2004). In the current study, the EDE-Q total and subscales showed the following adequate internal consistencies: composite (α = .95), Restraint (α = .84), Eating Concerns (α = .75), Shape Concern (α = .91).

Data Analysis

A power analysis using the G*Power 3 program (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that 150 participants were needed to reach sufficient power (.80) at an alpha level of .05 for the analyses. Therefore, the current sample size of 321 was determined to be satisfactory. All other statistical analyses were completed using SPSS 23. First, descriptive statistics were calculated for all variables used in the study.

Next, to assess possible group differences between the variables, means and standard deviations of each variable were compared and compared using one-way ANOVAs and post-hoc tests. These analyses indicated no significant differences.

Prior to running the main analyses, the data variables were examined for multicollinerity, missing data, outliers, and other possible violations of statistical assumptions. Males (n =41), gender not identified (n=43), and individuals outside the target age range (n =7) were also identified and deleted from the dataset. Missing data for each variable ranged from 3-15%. Listwise deletion was used to deal with missing data which resulted in excluding between 10 and 38 cases in each regression analysis. Specifically, participants who did not complete the full survey were not included. In order to detect outliers, discrepancy, leverage, and influence of the data points were examined using regression diagnostics. Based on these analyses, two outliers were detected and removed. Next, the Variance Inflation Factor (VIF) and Tolerance values were computed and evaluated to assess for multicollinearity. Given that there were no VIF values above the cutoff value of 10 or Tolerance values below 0.10, multicollinearity was not a significant problem with the data.

To test the first aim, which examines for potential relationships between appearance evaluation, body areas satisfaction, appearance investment, frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, frequency of positive general appearance commentary, effect of negative shape and weight commentary, effect of positive shape and weight commentary, and effect of positive general appearance commentary, multiple correlational analyses were conducted, and Pearson's product-moment correlation coefficients were evaluated. The

assumptions of Pearson's correlation include level of measurement, related pairs, absence of outliers, normality of variables, and linearity. Level of measurement states that each variable should be continuous. All of our variables were evaluated and found to be continuous so this assumption is met. The assumption of related pairs states that each participant should have a pair of variables, such that those can be correlated. Only participants who filled out the full survey were used, therefore this assumption was met. Each variable was examined earlier for outliers. All outliers were removed and the assumption of absence of outliers was met. The assumption of normality was tested by examining values of skewness, kurtosis, and histograms to determine whether they were less than an absolute value of 1 indicating normal distributions. This was the case for all tests. The assumption of linearity was examined using scatterplots. For the assumption to be met, a straight line relationship between the variables should be formed and this was confirmed.

The second, third, and fourth aims of the study were to examine the variables of appearance investment, frequency of appearance-related commentary, effect of appearance-related commentary, and their interactions as predictors of appearance satisfaction, body satisfaction, and eating disorder psychopathology. For each of these aims, hierarchical regression analyses were run. Thus, the six assumptions of regression analyses were examined prior to the regression analyses. The first assumption states that variables must be measured on a continuous level. This assumption had already been met in testing an assumption for Pearson's correlation. The second assumption, which states that the relationship between the independent and dependent variables has been correctly specified, was examined by using scatterplots with superimposed lowess curves for each

dependent variable against each independent variable. These scatterplots were examined for linear relationships. For the third, assumption, the data was examined for outliers, this process was previously addressed. Therefore, the data already met this assumption. For the fourth assumption, which states that independent variables must be correctly specified and should have no measurement error, prior research and theory were used to ensure that correct specifications of the independent variables were utilized. Further, to demonstrate the reliability of each variable used in analysis, Cronbach's alpha coefficients were calculated. To test the fifth assumption, homoscedasticity, which occurs when the error term is the same across all values of the independent variables, residuals were evaluated via plots displaying residuals against each independent variable. These plots were examined for patterns of heteroscedasticity. To test the sixth assumption, independence of residuals was tested by evaluating index plots for clusters and changes over time. To test the normality of residuals assumption, P-P plots of standardized residuals were created. These plots were examined for straight lines. Results of the above analyses indicated that data does not violate any of the mentioned assumptions of multiple regression.

In addition, to guard against the bias of repeated testing effects, and to avoid the likelihood of Type I error (incorrect rejection of the null hypothesis), a Bonferroni correction was used. This is a procedure that adjusts how significant effects are tested by considering the number of repeated analyses and multiple hypotheses being tested. To account for multiple hypotheses, an adjusted p-value was used to test for significance. To calculate the new significance level using Bonferroni's method, the desired p-value was determined by the number of hypotheses (predictors) being conducted. In the current

study, for step two of the regression analyses, there were four hypotheses, so .05 was divided by 4 (.05/04 = .0125), resulting in a new threshold significance level of .0125. For step three of regression analyses, there were seven hypotheses, so .05 was divided by 7 (.05/7 = .0071), resulting in a new threshold of significance level of .007). Both new significant levels allowed us to maintain 95% confidence in results of analyses.

The fifth aim of the study was to examine differences in appearance investment among different BMI classes and therefore, the assumptions of ANOVA were evaluated. The assumptions of ANOVA include that data must have a normal distribution, variances must be stable throughout the data, and observations must be independent. Histograms and values of kurtosis and skewness were calculated and evaluated to examine the assumption of normality. Values of kurtosis and skewness indicated an overall normal distribution that was slightly skewed but not to a significant level where transformations were indicated. A Levene's tests was used and such tests were not significant, indicating that the assumption of homogeneity had been met. Our variables did not violate the assumption of homogeneity of variance.

CHAPTER THREE

RESULTS

Participant demographic information is provided in Table 1. To test the first aim of the study, a Pearson product-moment correlation coefficient was computed to assess the relationships between appearance investment, frequency of negative shape and weight commentary, positive shape and weight commentary, frequency of general positive appearance commentary, body image satisfaction, and appearance satisfaction. Table 2 provides the correlational values for the analysis.

Table 1. Participant characteristics.

Variable	N (%)
Age	M=19.31 Years, SD=1.42 Years
School	
California State University-Dominguez Hills	134 (41.7)
La Sierra University	78 (24.3)
California Baptist University	109 (34.0)
Race	
African American/Black	29 (9.0)
American Indian/Alaskan Native	4 (1.2)
Asian American	32 (10.0)
European American/White	66 (20.6)
Hispanic/Latino(a)	170 (53.0)
Native Hawaiian or other Pacific Islander	4 (1.2)
Other	11 (3.4)
BMI	
Underweight	19 (6.1)
Normal Weight	182 (58.0)
Overweight	72 (22.9)
Obese	41 (13.1)

Aim 1: Correlation of Study Variables

Our first hypothesis was partially supported. Results indicated that significant relationships were found between appearance investment, frequency of positive shape and weight commentary, appearance satisfaction, and body satisfaction. Higher levels of appearance investment were related to lower frequencies of positive shape and weight commentary (r = -.152), lower levels of appearance satisfaction (r = -.428) and body satisfaction (r =-.491). There was a significant relationship found between appearance investment and effect of positive shape and weight commentary (r = -.133), although the correlation is small. It was also found that higher frequencies of positive shape and weight commentary were related to higher levels of appearance satisfaction (r =.554) and body satisfaction (r =.475). Results indicate there are no significant relationships between appearance investment and frequency of positive general appearance commentary (r = .053). Further, a significant, although small, correlation was found between appearance investment and effect of positive general appearance commentary (r = -.142). Positive general appearance commentary did have a significant positive relationship with appearance satisfaction (r =.292) and body satisfaction (r =.280).

Results indicated that appearance investment and frequency of negative shape and weight commentary have a significant, positive relationship (r = .349), such that higher levels of appearance investment were related to higher frequencies of negative shape and weight commentary. A small but significant relationship was found between appearance investment and effect of negative shape and weight commentary (r = .284). Significant relationships were also found between frequency of negative shape and weight commentary and appearance satisfaction (r =-.464) and body satisfaction (r =-.426), such

that a higher frequency of negative shape and weight commentary was related to lower levels of appearance and body satisfaction.

Table 2: Correlations of study variables

Measure	1	2	3	4	5	6	7	8	9	10
1.Appearance Investment	-									
2. FNSW Commentary	.349**	-								
3. FPSW Commentary	-.152**	-.258**	-							
4. FPGA Commentary	.053	.050	.407**	-						
5. ENSW Commentary	.284**	.393**	-.406**	-.057	-					
6. EPSW Commentary	-.133*	.270**	-.106**	-.135*	.301**	-				
7. EPGA Commentary	-.152**	.123*	-.073	-.274**	.283**	.648**	-			
8. Appearance Satisfaction	-.428**	-.464**	.554**	.292**	-.421**	-.192**	-.146*	-		
9. Body Satisfaction	-.491**	-.426**	.475**	.280**	-.409**	-.107	-.091	.794**	-	
10. ED Psychopathology	.497**	.407**	-.302**	-.021	.465**	-.037	-.021	-.446**	-.493	-

*p<0.05,**p<0.01 Note: FNSW = Frequency of Negative Shape and Weight, FPSW = Frequency of Positive Shape and Weight, FPGA = Frequency of Positive General Appearance, ENSW = Effect of Negative Shape and Weight, EPSW = Effect of Positive Shape and Weight, EPGA = Effect of Positive General Appearance, ED= Eating Disorder

Aim 2: Appearance Investment and Frequency of Commentary as Predictors of Appearance satisfaction and Body satisfaction

The second aim of the study was to examine if appearance investment and the frequency of appearance-related commentary predicted body image (appearance satisfaction and body satisfaction). Two sets of hierarchical regression analyses were conducted in order to determine the influence of appearance commentary, frequency of negative weight and shape commentary, frequency of positive weight and shape commentary, frequency of positive general commentary and the interactions between appearance investment and each type of appearance-related commentary on appearance satisfaction and body satisfaction. The first set of hierarchical regression analyses were conducted to examine appearance satisfaction. Appearance investment was entered in the first step of the regression analysis. Frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, and frequency of positive general appearance commentary were entered in the second step. Next, the interaction terms were created and entered in the third step.

Table 3. Results of hierarchical multiple regression analyses predicting appearance satisfaction from appearance investment, and frequency of appearance-related commentary for college-aged women.

	b	SE	95% CI	β	*t*	*p*	sr^2
Step 1							
Appearance Investment	-.565	.075	[-.714, -.417]	-.417	-7.501	.000	.171
Step 2							
Appearance Investment	-.345	.064	[-.471, -.220]	-.255	-5.409	.000	.056
FNSW Commentary	-.268	.042	[-.351, -.185]	-.310	-6.345	.000	.077
FPSW Commentary	.355	.048	[.260, .449]	.374	7.379	.000	.104
FPGA Commentary	.160	.066	[.031, .289]	.119	2.434	.031	.011
Step 3							
Appearance Investment	-.631	.326	[-1.273, .011]	-.466	-1.935	.054	.007
FNSW Commentary	.185	.242	[-.291, .662]	.214	.766	.444	.001
FPSW Commentary	.234	.270	[-.298, .767]	.248	.868	.386	.001
FPGA Commentary	-.266	.347	[-.949, .416]	-.198	-.769	.443	.001
Appearance Investment x FNSW Commentary	-.125	.067	[-.257, .007]	-.622	-1.871	.062	.006
Appearance Investment x FPSW Commentary	.034	.078	[-.120, .187]	.131	.432	.666	.000
Appearance Investment x FPGA Commentary	.129	.102	[-.071, .329]	.481	1.272	.205	.003

Note. FNSW = Frequency of Negative Shape and Weight Commentary, FPSW = Frequency of Positive Shape and Weight Commentary, FPGA = Frequency of Positive General Appearance Commentary. R^2 = .171, for Step 1. R^2 = .486 for Step 2. R^2 = .489 for Step 3.

Overall, the regression model accounted for a significant proportion of the variance in appearance satisfaction, R^2=.486, F (4,249) = 34.48, p < .001. Results of the regression analysis are shown in Table 3. In step one, appearance investment accounted

for a significant proportion of the variance in appearance satisfaction, $R^2 = .171$, $F(1, 268) = 56.27$, $p < .001$. Appearance investment was a significant individual predictor of appearance satisfaction in the first step of the regression model, such that a one-unit increase in appearance investment was associated with a .57 unit decrease in appearance satisfaction, $t(1) = -7.50$, $p < .001$. Appearance investment was also a significant individual predictor of appearance satisfaction when frequencies of different types of appearance-related commentary (negative shape and weight, positive shape and weight, and general positive appearance commentary) were entered into the model in the second step of the analysis ($p < .001$). Together, frequency of commentary accounted for an additional 31.9% of the variance in appearance satisfaction, above and beyond the influence of appearance investment, $\Delta R^2 = .486$, $F(4, 268) = 64.25$, $p < .001$.

In the second step of the model, appearance investment was a significant individual predictor of appearance satisfaction, such that a one-unit increase in appearance investment was associated with a .35 unit decrease in appearance satisfaction, $t(1) = -5.41$, $p < .001$. Frequency of negative shape and weight commentary was also a significant individual predictor of appearance satisfaction, such that it accounted for 7.7% of the variance in appearance satisfaction (sr^2=.077), and a one-unit increase in negative shape and weight commentary was associated with a .27 unit decrease in appearance satisfaction, $t(1) = -6.345$, $p < .001$. In addition, frequency of positive shape and weight commentary was a significant individual predictor of appearance satisfaction, such that it accounted for 10.4% of the variance in appearance satisfaction (sr^2=.104), and a one-unit increase in positive shape and weight commentary was associated with a .36 unit increase in appearance satisfaction, $t(1) = 7.379$, $p < .001$. Finally, frequency of positive general

appearance commentary was not a significant individual predictor of appearance satisfaction, $t(1) = 7.379$, $p = .031$. Therefore, frequency of positive general appearance commentary was not a significant predictor of appearance satisfaction.

In the final regression model, appearance investment, frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, frequency of positive general appearance commentary and the interactions between appearance investment and each type of appearance-related commentary were added into the model. The model was also found to be a significant fit of the data, F (7, 268) = 37.89, $p < .001$, However, it was not a statistically significant improvement in model fit when compared to the second model, $\Delta F = 1.87$, $p > .05$. Even though the F change was not significant, the model explained an additional 0.4% of the variance in appearance satisfaction, $_{\Delta}R^2 = .011$. Appearance investment ($\beta = -.466$, $t = -1.94$, $p > .05$), frequency of negative shape and weight commentary ($\beta = .214$, $t = .766$, $p > .05$), positive shape and weight commentary ($\beta = .248$, $t = .868$, $p > .05$), and positive general commentary ($\beta = -.198$, $t = -.769$, $p > .05$), appearance investment x frequency of negative shape and weight commentary ($\beta = -.622$, $t = -1.871$, $p > .05$), appearance investment x positive shape and weight commentary ($\beta = .131$, $t = .432$, $p > .05$), and appearance investment x positive general commentary ($\beta = .481$, $t = 1.272$, $p > .05$) were not significant predictors of appearance satisfaction. Thus, this model was rejected and the second model was retained, such that appearance investment, frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, but not frequency of positive general appearance commentary or their interactions, predicted appearance satisfaction.

For the first part of the second aim, our hypotheses focusing on appearance satisfaction were partially confirmed. As expected, higher levels of appearance investment and higher levels of the frequency of negative shape and weight commentary predicted lower levels of appearance satisfaction. Further, consistent with our hypothesis, higher levels of appearance investment and lower levels of the frequency of positive shape and weight commentary received predicted lower levels of appearance satisfaction. However, the hypothesis that higher levels of appearance investment and lower levels of the frequency of positive general appearance commentary received would predict lower levels of appearance satisfaction was not confirmed. Results showed that appearance investment, frequency of negative shape and weight commentary, and frequency of positive shape and weight commentary predicted appearance satisfaction. The variables were then trichotomized (low, medium, high) and graphed to view the relationship (Figure 1). After the variables were trichotomized, it was noted that in some cases participants did not endorse low levels of either appearance investment or a specific type of appearance-related commentary. Thus, these points were not reflected in the figures.

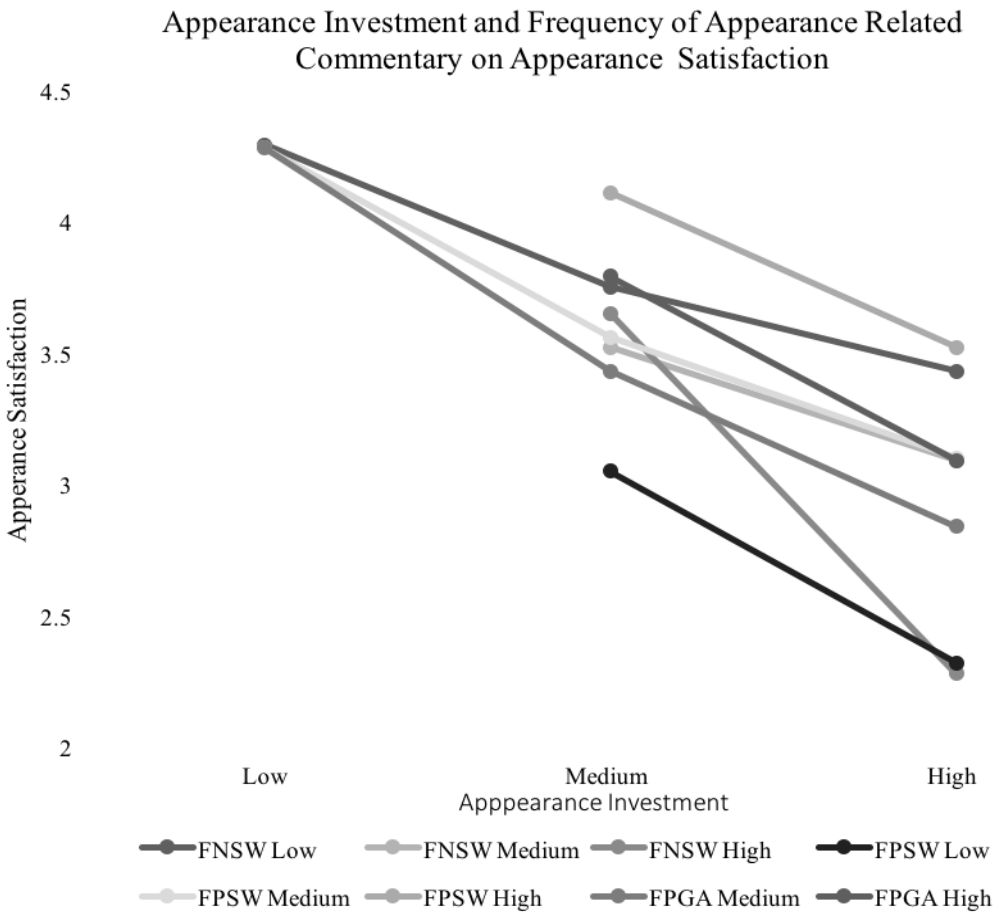

Figure 1: *Relationships Between Appearance Investment, Frequency of Appearance-related Commentary and Appearance Satisfaction*

**Note*: FNSW = Frequency of Negative Shape and Weight Commentary, FPSW = Frequency of Positive Shape and Weight Commentary, FPGA = Frequency of Positive General Appearance Commentary.

To test the second part of the second aim of the study, which was to examine if appearance investment and the frequency of appearance-related commentary predicted body image (appearance satisfaction and body satisfaction), a second set of hierarchical regression analyses was conducted to examine body satisfaction. Appearance investment was entered in the first step of the regression analysis. Frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, and frequency

of positive general appearance commentary were entered in the second step. Next, the interaction terms were created and entered in the third step.

Table 4. Results of hierarchical multiple regression analysis predicting body satisfaction from appearance investment, and frequency of appearance-related commentary for college-aged women.

	B	SE	95% CI	β	*t*	*p*	sr^2
Step 1							
Appearance Investment	-.571	.063	[-.695, -.447]	-.486	-9.039	.000	.236
Step 2							
Appearance Investment	-.423	.058	[-.537, -.309]	-.360	-7.293	.000	.111
FNSW Commentary	-.192	.038	[-.267, -.116]	-.310	-4.985	.000	.052
FPSW Commentary	.225	.044	[.138, .311]	.269	5.122	.000	.055
FPGA Commentary	.160	.066	[.031, .289]	.119	3.323	.001	.023
Step 3							
Appearance Investment	-.572	.296	[-1.154, .011]	-.487	-1.932	.054	.008
FNSW Commentary	.320	.222	[-.758, .118]	-.425	-1.439	.151	.004
FPSW Commentary	.307	.248	[-.182, .767]	.368	1.238	.217	.003
FPGA Commentary	.067	.315	[-.554, .689]	.057	.213	.831	.000
Appearance Investment x FNSW Commentary	.036	.061	[-.085, .157]	.204	.580	.562	.000
Appearance Investment x FPSW Commentary	-.024	.072	[-.164, .117]	-.104	-.329	.742	.000
Appearance Investment x FPGA Commentary	.039	.092	[-.143, .220]	.166	.419	.676	.000

Note. FNSW = Frequency of Negative Shape and Weight Commentary, FPSW = Frequency of Positive Shape and Weight Commentary, FPGA = Frequency of Positive General Appearance Commentary. R^2 = .233, for Step 1. R^2 = .446 for Step 2. R^2 = .442 for Step 3.

Overall, the regression model accounted for a significant proportion of the variance in body satisfaction, R^2=.446, F (4, 265) = 54.41, p < .001. Results of the regression analysis are shown in Table 4. In step one, appearance investment accounted for a significant proportion of the variance in body satisfaction, R^2 = .233, F(1, 265) = 81.70, p < .001. Appearance investment was a significant individual predictor of body satisfaction in the first step of the regression model, such that a one-unit increase in appearance investment was associated with a .57 unit decrease in body satisfaction, t(1) = -9.039, p < .001. Appearance investment continued to be a significant individual predictor of body satisfaction when frequencies of different types of appearance-related commentary (negative shape and weight, positive shape and weight, and general positive appearance commentary) were entered into the model in the second step of the analysis (p < .001). Together, frequency of commentary accounted for an additional 21.8% of the variance in body satisfaction, above and beyond the influence of just appearance investment, ΔR^2 = .218, F(4, 265) = 54.41, p < .001.

In the second step of the model, appearance investment was a significant individual predictor of body satisfaction, such that a one-unit increase in appearance investment was associated with a .43 unit decrease in body satisfaction, t(1) = -7.293, p < .001. Frequency of negative shape and weight commentary was also a significant individual predictor of body satisfaction, such that it accounted for 5.2% of the variance in body satisfaction (sr^2=.052), and a one-unit increase in negative shape and weight commentary was associated with a .19 unit decrease in body satisfaction, t(1) = -4.985, p < .001. Frequency of positive shape and weight commentary was also a significant individual predictor of body satisfaction, such that it accounted for 5.5% of the variance

in body satisfaction (sr^2=.055), and a one-unit increase in positive shape and weight commentary was associated with a .23 unit increase in body satisfaction, $t(1) = 5.122$, $p <$ .001. Finally, frequency of positive general appearance commentary was also a significant individual predictor of body satisfaction, such that it accounted for an additional 2.3% of the variance in body satisfaction (sr^2=.023), and a one-unit increase in positive shape and weight commentary was associated with a .16 unit increase in appearance satisfaction, $t(1) = 3.323$, $p < .01$.

In the final regression model, appearance investment, frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, frequency of positive general appearance commentary and their interactions between appearance investment and each type of appearance-related commentary were added into the model. The model was also found to be a significant fit of the data, F (7, 268) = 37.89, $p < .001$. However, it was not a statistically significant improvement in model fit when compared to the second model, ΔF =.262, $p > .05$, and none of the variables were significant predictors. Thus, the model was rejected and the second model was retained, such that appearance investment and the frequencies of different types of appearance related commentary, but not their interactions, predicted the amount of body satisfaction.

For the second part of the second aim, our hypotheses focusing on body satisfaction were confirmed. As expected, higher levels of appearance investment and higher levels of the frequency of negative shape and weight commentary received predicted lower levels of body satisfaction. Further, consistent with our hypothesis, higher levels of appearance investment and lower levels of the frequency of positive shape and weight commentary predicted lower levels of body satisfaction was also

confirmed. Finally, the hypothesis that higher levels of appearance investment and lower levels of the frequency of positive general appearance commentary received would predict lower levels of body satisfaction was also confirmed. Results showed that appearance investment, frequency of negative shape and weight commentary, frequency of positive shape and weight commentary, and frequency of positive general appearance commentary predicted body satisfaction. The variables were then trichotomized (low, medium, high) and graphed to view the relationship (Figure 2). After the variables were trichotomized, it was noted that in some cases participants did not endorse low levels of either appearance investment or a specific type of appearance-related commentary. Thus, these points were not reflected in the figures.

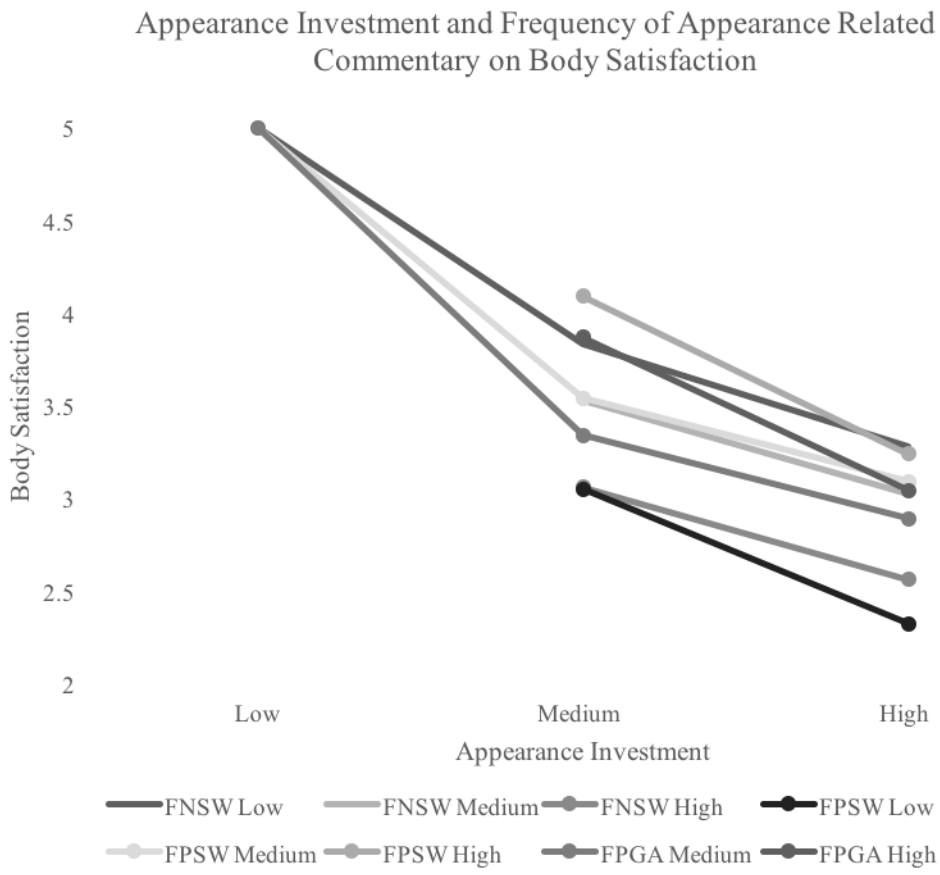

Figure 2: *Relationships Between Appearance Investment, Frequency of Appearance-related Commentary and Body Satisfaction*

**Note*: FNSW=Frequency of Negative Shape and Weight Commentary, FPSW=Frequency of Positive Shape and Weight Commentary, FPGA= Frequency of Positive General Appearance Commentary.

Aim 3: Appearance Investment and Effect of Commentary as Predictors of Appearance Satisfaction and Body Satisfaction

The third aim of the study was to examine if appearance investment and the effect of appearance-related commentary predicted body image (appearance satisfaction and body satisfaction). Two sets of hierarchical regression analyses were conducted in order to determine the influence of appearance commentary, effect of negative weight and shape commentary, effect of positive weight and shape commentary, effect of positive general commentary and the interactions between appearance investment and each type of appearance-related commentary on appearance satisfaction and body satisfaction. The first set of hierarchical regression analyses were conducted to examine appearance satisfaction. Appearance investment was entered in the first step of the regression analysis. Effect of negative shape and weight commentary, effect of positive shape and weight commentary, and effect of positive general appearance commentary were entered in the second step. Next, the interaction terms were created and entered in the third step.

Table 5. Results of hierarchical multiple regression analysis predicting appearance satisfaction from appearance investment, and effect of appearance-related commentary for college-aged women.

	b	SE	95% CI	β	*t*	*p*	sr^2
Step 1							
Appearance Investment	-.555	.078	[-.708, -.403]	-.408	-7.154	.000	.166
Step 2							
Appearance Investment	-.484	.076	[-.633, -.335]	-.356	-6.401	.000	.111
ENSW Commentary	-.326	.057	[-.439, -.213]	-.313	-5.689	.000	.088
EPSW Commentary	-.172	.061	[-.292, -.052]	-.178	-2.833	.005	.022
EPGA Commentary	-.162	.089	[.337, .013]	-.116	-1.819	.070	.009
Step 3							
Appearance Investment	-1.129	.449	[-2.01, -.245]	-.830	-2.516	.013	.017
ENSW Commentary	-1.042	.321	[-1.67, -.410]	-1.001	-3.247	.001	.028
EPSW Commentary	.193	.358	[-.512, .897]	.200	.539	.590	.000
EPGA Commentary	-.368	.525	[-1.40, .665]	-.263	-.701	.484	.001
Appearance Investment x ENSW Commentary	.209	.092	[.028, .391]	1.030	2.275	.024	.014
Appearance Investment x EPSW Commentary	-.106	.100	[-.304, .091]	-.404	-1.059	.290	.003
Appearance Investment x EPGA Commentary	.065	.158	[-.247, .377]	.158	.409	.683	.000

Note. ENSW=Effect of Negative Shape and Weight Commentary, EPSW=Effect of Positive Shape and Weight Commentary, EPGA=Effect of Positive General Appearance Commentary. R^2 = .166 for Step 1. R^2 = .303 for Step 2. R^2 = .314 for Step 3.

Overall, the regression model accounted for a significant proportion of the variance in appearance satisfaction, R^2=.303, F (4,257) = 51.18, p < .001. Results of the regression analysis are shown in Table 5. In step one, Appearance investment accounted for a significant proportion of the variance in appearance satisfaction, R^2 = .166, F(1,

257) = 51.18, $p < .001$. Appearance investment was a significant individual predictor of appearance satisfaction in the first step of the regression model, such that a one-unit increase in appearance investment was associated with a .56 unit decrease in appearance satisfaction, $t(1) = -7.16$, $p < .001$. Appearance investment was also a significant individual predictor of appearance satisfaction when effects of different types of appearance related-commentary (negative shape and weight, positive shape and weight, and general positive appeared commentary) were entered into the model in the second step of the analysis ($p < .001$). Together, effect of commentary accounted for an additional 14.6% of the variance in appearance satisfaction, above and beyond the influence of appearance investment, $\Delta R^2 = .147$, $F(4, 257) = 28.95$, $p < .001$.

In the second step of the model appearance investment was a significant individual predictor of appearance satisfaction, such that a one-unit increase in appearance investment was associated with a .48 unit decrease in appearance satisfaction, $t(1) = -6.401$, $p < .001$. Effect of negative shape and weight commentary was also a significant individual predictor of appearance satisfaction, such that it accounted for 8.8% of the variance in appearance satisfaction (sr^2=.088), and a one-unit increase in negative shape and weight commentary was associated with a .33 unit decrease in appearance satisfaction, $t(1) = -5.689$, $p < .001$. In addition, effect of positive shape and weight commentary was also a significant individual predictor of appearance satisfaction, such that it accounted for 2.2% of the variance in appearance satisfaction (sr^2=.022), and a one-unit increase in positive shape and weight commentary was associated with a .17 unit decrease in appearance satisfaction, $t(1) = -2.833$, $p < .001$. Finally, effect of positive general appearance commentary was not a significant individual predictor of appearance

satisfaction, even so, it accounted for an additional .9% of the variance in appearance satisfaction (sr^2=.009), and a one-unit increase in positive shape and weight commentary was associated with a .16 unit decrease in appearance satisfaction, $t(1) = -1.819$, $p = .070$. Thus, effects of positive general commentary were not statistically significant predictors of body satisfaction.

In the final regression model, appearance investment, effect of negative shape and weight commentary, effect of positive shape and weight commentary, effect of positive general appearance commentary, and the interactions between appearance investment and each type of appearance-related commentary were added into the model. The model was also found to be a significant fit of the data, $F(7, 257) = 17.78$, $p < .001$. However, it was not a statistically significant improvement in model fit when compared to the second model, $\Delta F = 2.29$, $p > .05$. Thus, the third version of the model was rejected. Even though the model was rejected and *F* change was not significant, the model explained an additional 0.8% of the variance in appearance satisfaction, $\Delta R^2 = .018$. The variable entered into the regression that were found to be significant predictors of the outcome variable of appearance satisfaction, effect of negative shape and weight commentary (β = -1.042, t =-3.247, p = .001). In this section of the model, variables that were not considered significant included: effects of positive shape and weight, effects of positive general appearance, appearance investment x positive shape and weight commentary, and appearance investment x positive general commentary. This model did not have statistical significant improvement over the other two models and this model was rejected. Therefore, the second model was retained, such that appearance investment and effect of

negative shape and weight, effect of positive shape and weight, but not effect of positive general appearance commentary or their interactions, predicted appearance satisfaction.

Our hypotheses for the first part of the third aim were mostly confirmed. As expected, higher levels of appearance investment and greater negative effect of negative shape and weight commentary predicted lower levels of appearance satisfaction. Further, in line with our hypothesis, higher levels of appearance investment and greater negative effect of positive shape and weight commentary predicted lower levels of appearance satisfaction was also confirmed. Finally, the hypothesis that higher levels of appearance investment and greater negative effect of positive general appearance commentary received would predict lower levels of appearance satisfaction was not confirmed. Results showed that appearance investment, effect of negative shape and weight commentary, effect of positive shape and weight commentary, and effect of positive general appearance commentary predicted appearance satisfaction. The variables were then trichotomized (low, medium, high) and graphed to view the relationship (Figure 3). After the variables were trichotomized, it was noted that in some cases participants did not endorse low levels of either appearance investment or a specific type of appearance-related commentary. Thus, these points were not reflected in the figures.

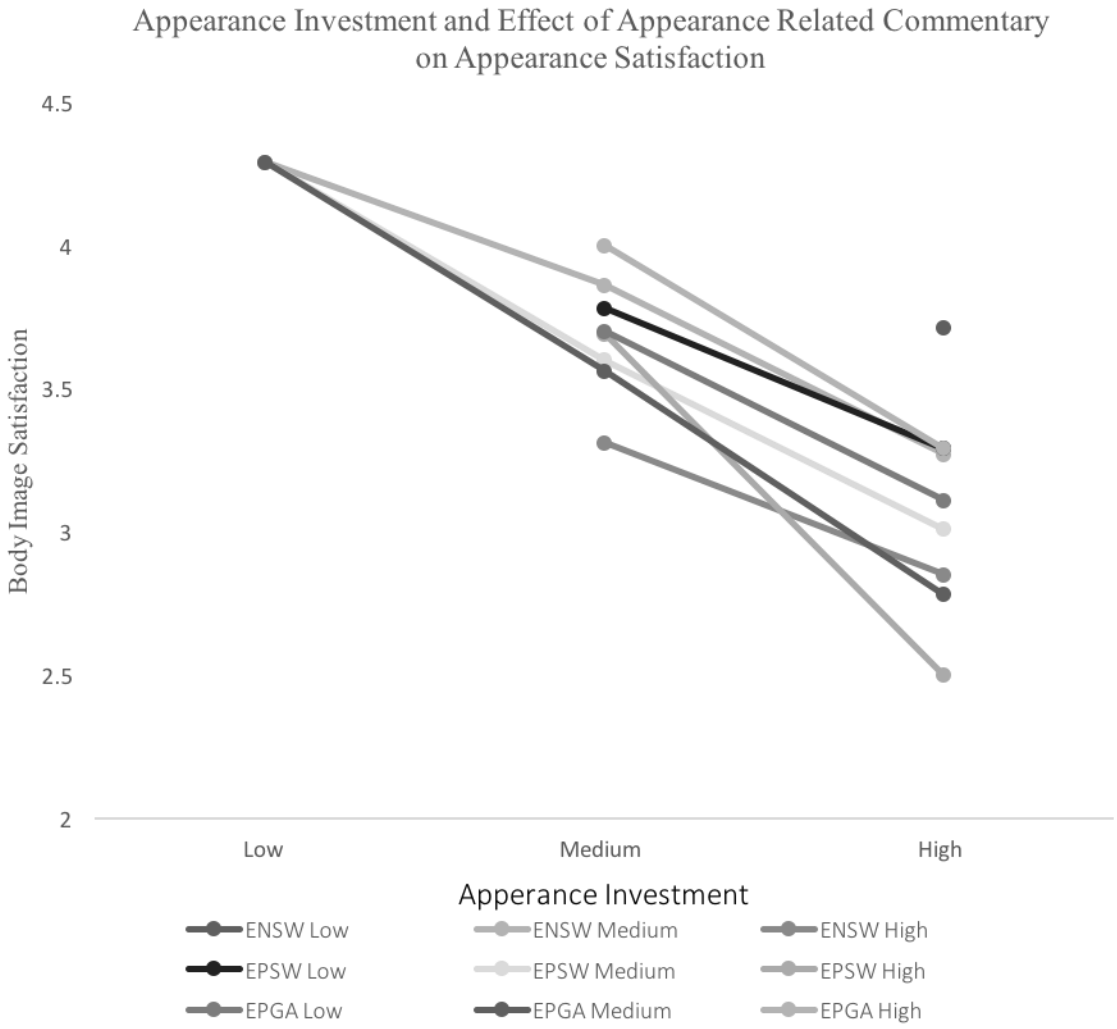

Figure 3: *Relationships Between Appearance Investment, Effect of Appearance-related Commentary and Appearance Satisfaction*

**Note*: ENSW=Effect of Negative Shape and Weight Commentary, EPSW=Effect of Positive Shape and Weight Commentary, EPGA=Effect of Positive General Appearance Commentary.

To continue testing the third aim of the study, which was to examine if appearance investment and the effect of appearance-related commentary acted as predictors of body image (appearance satisfaction and body satisfaction), a second set of hierarchical regression analyses was conducted to examine body satisfaction.

Appearance investment was entered into the first step of the regression analysis. Effect of negative shape and weight commentary, effect of positive shape and weight commentary, and effect of positive general appearance commentary were entered into the second step. Next, the interaction terms were created and entered in the third step. (Table 6).

Table 6. Results of hierarchical multiple regression analysis predicting body satisfaction from appearance investment, and effect of appearance-related commentary for college-aged women.

	B	SE	95% CI	β	*t*	*p*	sr^2
Step 1							
Appearance Investment	-.564	.067	[-.696, -.432]	-.468	-8.406	.000	.219
Step 2							
Appearance Investment	-.500	.067	[-.633, -.368]	-.415	-7.429	.000	.151
ENSW Commentary	-.259	.051	[-.360, -.157]	-.279	-5.026	.000	.069
EPSW Commentary	-.102	.054	[-.208, .005]	.118	-1.874	.062	.009
EPGA Commentary	-.140	.080	[-.297, .016]	.113	-1.765	.079	.008
Step 3							
Appearance Investment	-1.406	.397	[-2.188, -.624]	-1.167	-3.543	.000	.033
ENSW Commentary	-1.174	.222	[-.758, -.618]	-.425	-1.439	.000	.045
EPSW Commentary	-.385	.248	[-.182, .248]	.368	1.238	.232	.003
EPGA Commentary	.354	.315	[-.554, 1.264]	.057	.213	.445	.002
Appearance Investment x ENSW Commentary	.264	.061	[-.085, .423]	.204	.580	.001	.028
Appearance Investment x EPSW Commentary	.078	.072	[-.164, .255]	-.104	-.329	.383	.002
Appearance Investment x EPGA Commentary	-.142	.092	[-.143, .133]	.166	.419	.311	.002

Note. ENSW=Effect of Negative Shape and Weight Commentary, EPSW=Effect of Positive Shape and Weight Commentary, EPGA=Effect of Positive General Appearance Commentary. R^2 = .216, for Step 1. R^2 = .310 for Step 2. R^2 = .336 for Step 3.

Overall, the regression model accounted for a significant proportion of the variance in body satisfaction, R^2=.310, F (4, 253) = 29.40, p < .001. Results of the regression analyses are shown in Table 6. In step one, appearance investment accounted for a significant proportion of the variance in body satisfaction, R^2 = .219, F(1, 253) = 29.39, p < .001. Appearance investment was a significant individual predictor of body satisfaction in the first step of the regression model, such that a one-unit increase in appearance investment was associated with a .57 unit decrease in body satisfaction, t(1) = -8.406, p < .001. Appearance investment was also a significant individual predictor of body satisfaction when the effect of different types of appearance-related commentary (negative shape and weight, positive shape and weight, and general positive appearance commentary) were entered into the model in the second step of the analysis (p < .001). Together, effect of commentary accounted for an additional 10.2% of the variance in body satisfaction, above and beyond the influence of just appearance investment, ΔR^2 = .218, F(4, 253) = 29.39, p < .001.

In the second step of the model, appearance investment was a significant individual predictor of body satisfaction, such that a one-unit increase in appearance investment was associated with a .50 unit decrease in body satisfaction, t(1) = -7.429, p < .001. Effect of negative shape and weight commentary was also a significant individual predictor of body satisfaction, such that it accounted for 6.9% of the variance in body satisfaction (sr^2=.069), and a one-unit increase in negative shape and weight commentary was associated with a .26 unit decrease in body satisfaction, t(1) = -5.026, p < .001. Effect of positive shape and weight commentary was not a significant individual predictor of body satisfaction (sr^2=.009, t(1) = -1.874, p= .062), and neither was effect of

positive general appearance commentary (sr^2=.008, $t(1) = -1.763$, p= .079). Thus, effect of positive shape and weight commentary and effect of positive general commentary were not statistically significant predictors of body satisfaction.

In the final regression model, appearance investment, effect of negative shape and weight commentary, effect of positive shape and weight commentary, effect of positive general appearance commentary and the interactions between appearance investment and the effect of each type of appearance-related commentary were added into the model. The model was also found to be a significant fit of the data, F (7, 2253) = 19.28, $p < .001$, and it was a statistically significant improvement in model fit when compared to the second model, ΔF =.4.25, p =.006. Variables shown to be significant predictors of body satisfaction included appearance investment, effect of negative shape and weight commentary, and the interaction effect of negative shape and weight commentary. In this version of the model, appearance investment was a significant individual predictor of body satisfaction, such that it accounted for 3.3% of the variance in body satisfaction (sr^2=.033) and a one-unit increase in appearance investment was associated with a 1.41 unit decrease in body satisfaction, $t(1) = -3.3543$, $p < .001$. Effect of negative shape and weight commentary was also a significant individual predictor of body satisfaction, such that it accounted for 4.5% of the variance in body satisfaction (sr^2=.045), and a one-unit increase in negative shape and weight commentary was associated with a 1.17 unit decrease in body satisfaction, $t(1) = -1.44$, $p < .001$.

With regards to the interactions in the final model, the interaction between appearance investment and effect of negative shape and weight commentary was also a significant individual predictor of body satisfaction. This interaction accounted for 2.8%

of the variance in body satisfaction (sr^2=.028), and a one-unit increase in negative shape and weight commentary was associated with a .26 unit decrease in body satisfaction, $t(1) = .580$, $p < .001$. However, when collinearity statistics were examined for this version of the model, the model became invalid (tolerance<.8, VIF>10) and consequently, the model was rejected. Therefore, the second model was retained, such that appearance investment and the effect of negative shape and weight commentary were significant predictors of body satisfaction. Effect of positive shape and weight commentary, effect of positive general commentary, and the interactions between appearance investment and the effect of each type of appearance-related commentary, were not significant predictors of body satisfaction.

Our hypotheses for the second part of the aim were only partially confirmed. As expected, higher levels of appearance investment and higher levels of a negative effect of negative shape and weight commentary predicted lower levels of body satisfaction. However, our hypothesis that higher levels of appearance investment and higher levels of a negative effect of positive shape and weight commentary received would be predict of lower levels of body satisfaction was not confirmed. Finally, the hypothesis that higher levels of appearance investment and greater negative effect of positive general appearance commentary would predict lower levels of body satisfaction also was not confirmed. Results showed that both appearance investment and effect of negative shape and weight commentary predicted body satisfaction. The variables were then trichotomized (low, medium, high) and graphed to view the relationship (Figure 4). After the variables were trichotomized, it was noted that in some cases participants did not

endorse low levels of either appearance investment or a specific type of appearance-related commentary. Thus, these points were not reflected in the figures.

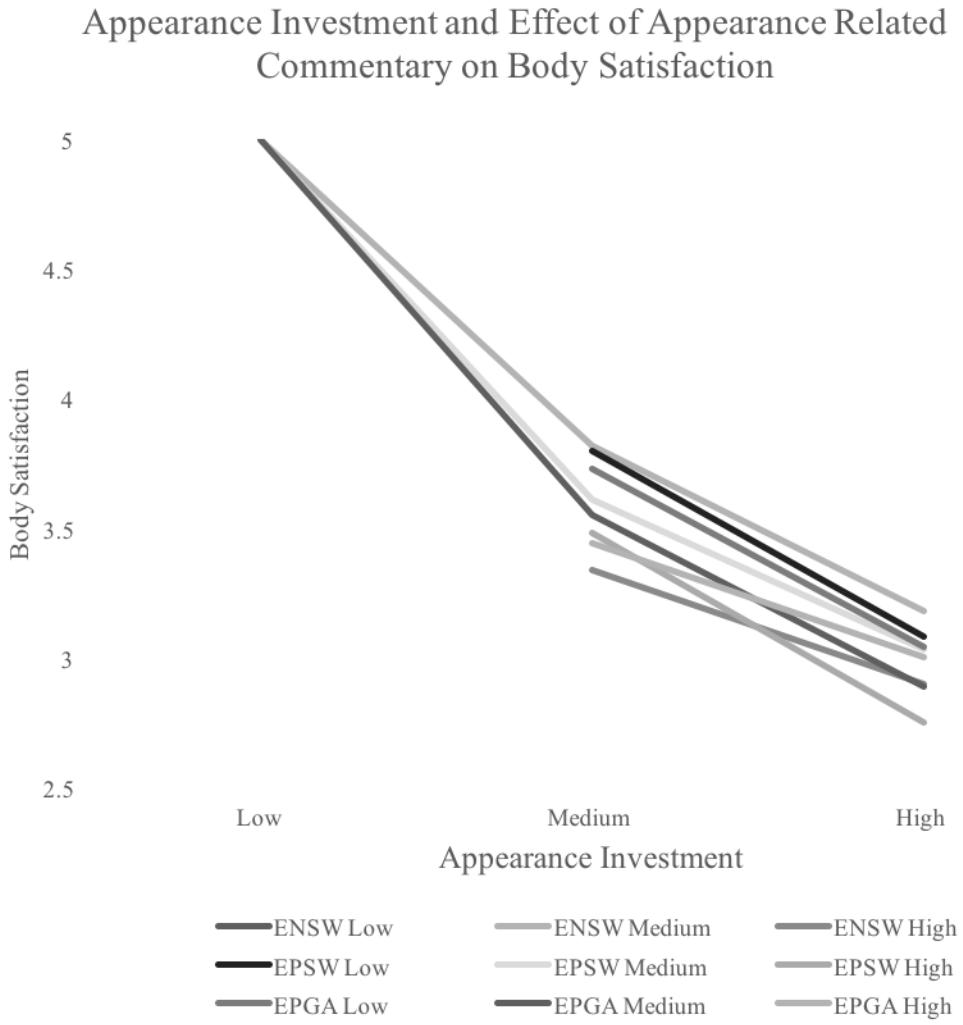

Figure 4: *Relationships Between Appearance Investment, Effect of Appearance-related Commentary and Body Satisfaction*

**Note*: ENSW=Effect of Negative Shape and Weight Commentary, EPSW=Effect of Positive Shape and Weight Commentary, EPGA=Effect of Positive General Appearance Commentary.

Aim 4: Appearance Investment and Effect of Commentary as Predictors of Eating Disorder Psychopathology

The fourth aim of the study was to examine if appearance investment and the effect of appearance-related commentary predicted eating disorder psychopathology. One set of hierarchical regression analyses were conducted for this aim. Appearance investment was entered in the first step of the regression analysis. Effect of negative shape and weight commentary, effect of positive shape and weight commentary and effect of positive general appearance commentary was entered in the second step. Next, interaction terms were created and entered in the third step (Table 7).

Table 7. Results of hierarchical multiple regression analysis predicting eating disorder psychopathology from appearance investment, and effect of appearance-related commentary for college-aged women.

	b	SE	95% CI	β	*t*	*p*	sr^2
Step 1							
Appearance Investment	1.184	.133	[.923, 1.446]	.492	8.909	.000	.242
Step 2							
Appearance Investment	.940	.132	[.681, 1.199]	.391	7.146	.000	.133
ENSW Commentary	.664	.100	[.466, .862]	.358	6.615	.000	.114
EPSW Commentary	.070	.110	[-.147, .286]	-.040	.633	.527	.001
EPGA Commentary	.117	.161	[-.200, .434]	.046	.727	.468	.001
Step 3							
Appearance Investment	1.344	.793	[-.218, 2.906]	.559	1.695	.091	.008
ENSW Commentary	.790	.566	[-.355, 1.876]	.410	1.343	.180	.004
EPSW Commentary	.662	.649	[-.618, 1.941]	.381	1.019	.309	.002
EPGA Commentary	-.004	.946	[-1.866, 1.859]	-.001	-.004	.997	.000
Appearance Investment x ENSW Commentary	-.027	.162	[-.346, .293]	-.074	-.165	.869	.000
Appearance Investment x EPSW Commentary	-.165	.180	[-.519, .190]	-.350	-.915	.361	.002
Appearance Investment x EPGA Commentary	.026	.283	[-.531, .583]	.036	.093	.926	.000

Note. ENSW=Effect of Negative Shape and Weight Commentary, EPSW=Effect of Positive Shape and Weight Commentary, EPGA=Effect of Positive General Appearance Commentary. R^2 = .239 for Step 1. R^2 = .350 for Step 2. R^2 = .345 for Step 3.

Overall, the regression model accounted for a significant proportion of the variance in eating disorder psychopathology, R^2=.350, F (4, 249) = 34.48, p < .001. Results of the regression analyses are shown in Table 7. In step one, appearance investment accounted for a significant proportion of the variance in eating disorder

psychopathology, R^2 = .239, F (1, 249) = 79.36, p < .001. Appearance investment was a significant individual predictor of eating disorder psychopathology in the first step of the regression model, such that a one-unit increase in appearance investment was associated with a 1.18 unit increase in eating disorder psychopathology, $t(1) = 8.909$, $p < .001$. Appearance investment continued to be a significant individual predictor of eating disorder psychopathology when the effect of each type of commentary (negative shape and weight, positive shape and weight, and general positive appearance commentary) was entered into the model in the second step of the analysis ($p < .001$). Together, effect of commentary accounted for an additional 11.8% of the variance in body satisfaction, above and beyond the influence of just appearance investment, $\Delta R^2 = .118$, $F(4, 249) = 34.48$, $p < .001$.

In the second step of the model appearance investment was a significant individual predictor of eating disorder psychopathology such that a one-unit increase in appearance investment was associated with a .94 unit increase in eating disorder psychopathology, $t(1) = 7.146$, $p < .001$. Effect of negative shape and weight commentary was also a significant individual predictor of eating disorder psychopathology, such that it accounted for 11.4% of the variance in eating disorder pathology (sr^2=.114), and a one-unit increase in negative shape and weight commentary was associated with a .66 unit increase in eating disorder psychopathology, $t(1) = 6.615$, $p < .001$. Effect of positive shape and weight commentary was not a significant individual predictor of body satisfaction (sr^2=.001, $t(1) = .633$, p= .527), and neither was effect of positive general appearance commentary (sr^2=.001, $t(1)$ =.727, p= .468). Thus, effect of

positive shape and weight commentary and effect of positive general commentary were not statistically significant predictors of eating disorder psychopathology.

In the final regression model, appearance investment, effect of negative shape and weight commentary, effect of positive shape and weight commentary, effect of positive general appearance commentary and the interactions between appearance investment and the effect of each type of appearance-related commentary were added into the model. The model was also found to be a significant fit of the data, F (7, 249) = 19.70, $p < .001$, but it was not a statistically significant improvement in model fit when compared to the second model, ΔF =15.03, p =.786. This model was not a statistical improvement over the last one and thus, the model was rejected. Therefore, the second model was retained, such that appearance investment and the effect of negative shape and weight commentary were significant predictors of eating disorder psychopathology. Effect of positive shape and weight commentary, effect of positive general commentary, and all interactions between appearance investment and the effect of each type of appearance-related commentary were not significant predictors of body satisfaction.

Our hypotheses for the fourth aim of the study were only partially confirmed. As expected, higher levels of appearance investment and greater negative effect of negative shape and weight commentary predicted higher levels of eating disorder psychopathology. However, higher levels of appearance investment and greater level of negative effect of positive shape and weight commentary would be predict higher levels of eating disorder psychopathology was not confirmed. Finally, the hypothesis that higher levels of appearance investment and greater negative effect of positive general appearance commentary would predict higher levels of eating disorder psychopathology

was not confirmed. Results showed that both appearance investment and effect of negative shape and weight commentary predicted eating disorder psychopathology. The variables were then trichotomized (low, medium, high) and graphed to view the relationship (Figure 5). After the variables were trichotomized, it was noted that in some cases participants did not endorse low levels of either appearance investment or a specific type of appearance-related commentary. Thus, these points were not reflected in the figures.

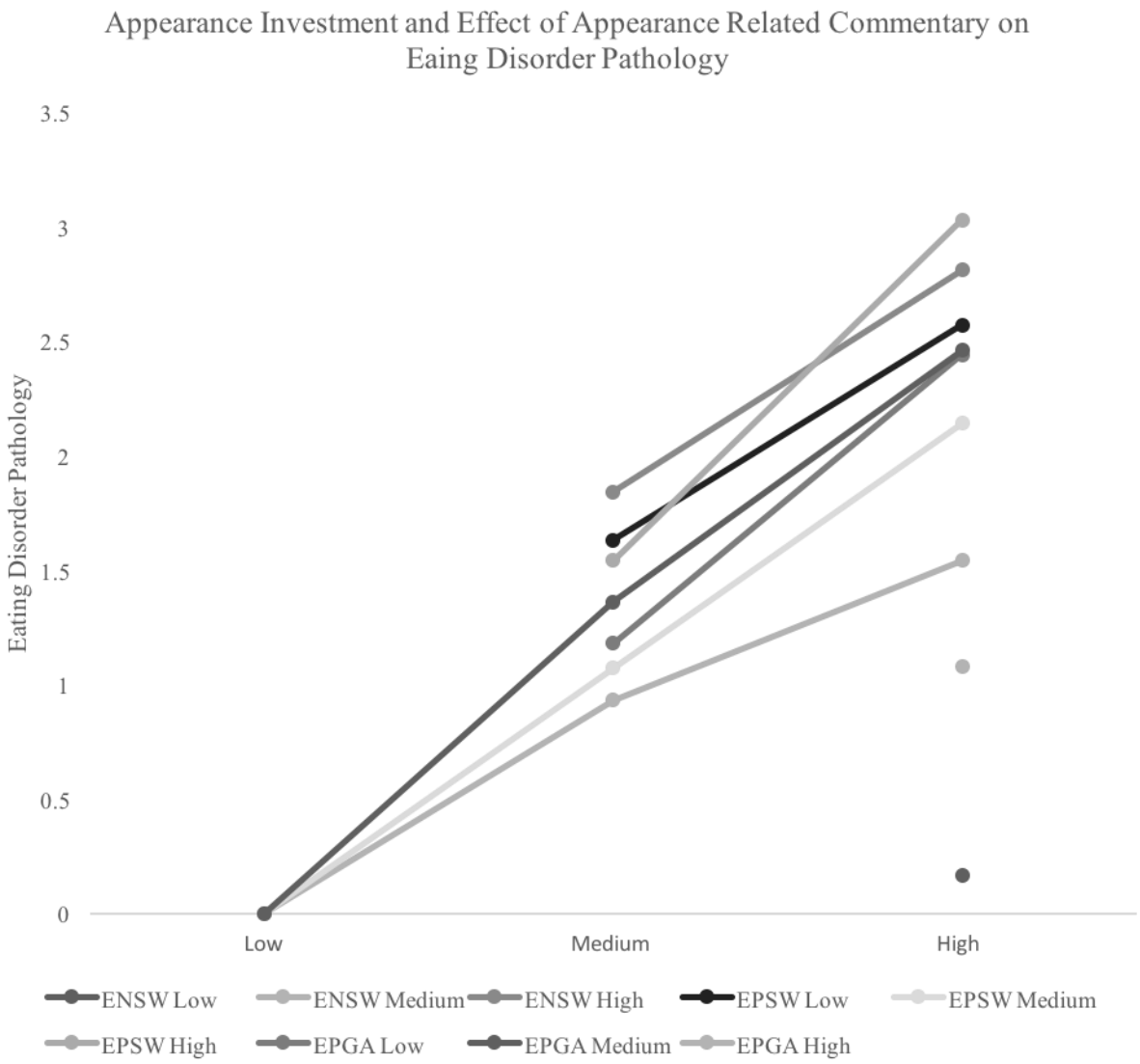

Figure 5: *Relationships Between Appearance Investment, Effect of Appearance-related Commentary and Eating Disorder Pathology*

**Note*: ENSW=Effect of Negative Shape and Weight Commentary, EPSW=Effect of Positive Shape and Weight Commentary, EPGA=Effect of Positive General Appearance Commentary.

Aim 5: Appearance Investment among BMI Groups

To test the fifth aim of the study, which compared weight groups on appearance investment, a one-way analysis of variance (ANOVA) with a post-hoc test was conducted. Table 8 provides the means and standard deviations for appearance investment among different BMI groups, and the results of the ANOVA. Due to limited research in this area, no hypotheses were proposed for this aim. Results indicated that there were significant differences in appearance investment between the four BMI groups, $F(3, 289) = 2.98$, $p = .032$. An LSD post-hoc analysis revealed that women in the underweight group ($M=3.41$, $SD=.50$) were not statistically significantly different from women in the normal weight, overweight, and obese groups. However, women in the normal weight category ($M = 3.29$, $SD = .64$) reported significantly lower levels of appearance investment than women in the overweight group ($M = 3.50$, $SD = 0.55$) and the obese group ($M = 3.56$, $SD = .59$). Post-hoc analysis showed no significant differences in level of appearance investment between women in underweight and those in the overweight or obese BMI groups (Figure 6).

Table 8. Means and standard deviations for appearance investment for BMI groups and results of analysis of variance.

Dependent Variable	Underweight (n = 18)	Normal Weight (n = 167)	Overweight (n = 69)	Obese (n = 36)	df	*F*	*p-value*	η^2
Appearance Investment	3.41 (.51)	3.30 (.65)	3.50 (.56)	3.56 (.62)	3,289	2.982	.032[ab]	.030

Note. a = significant difference between normal weight and overweight; b = significant difference between normal weight and obese, c = significant difference between underweight and normal weight, d = significant difference between underweight and overweight, e= significant difference between underweight and obese, f = significant difference between overweight and obese.

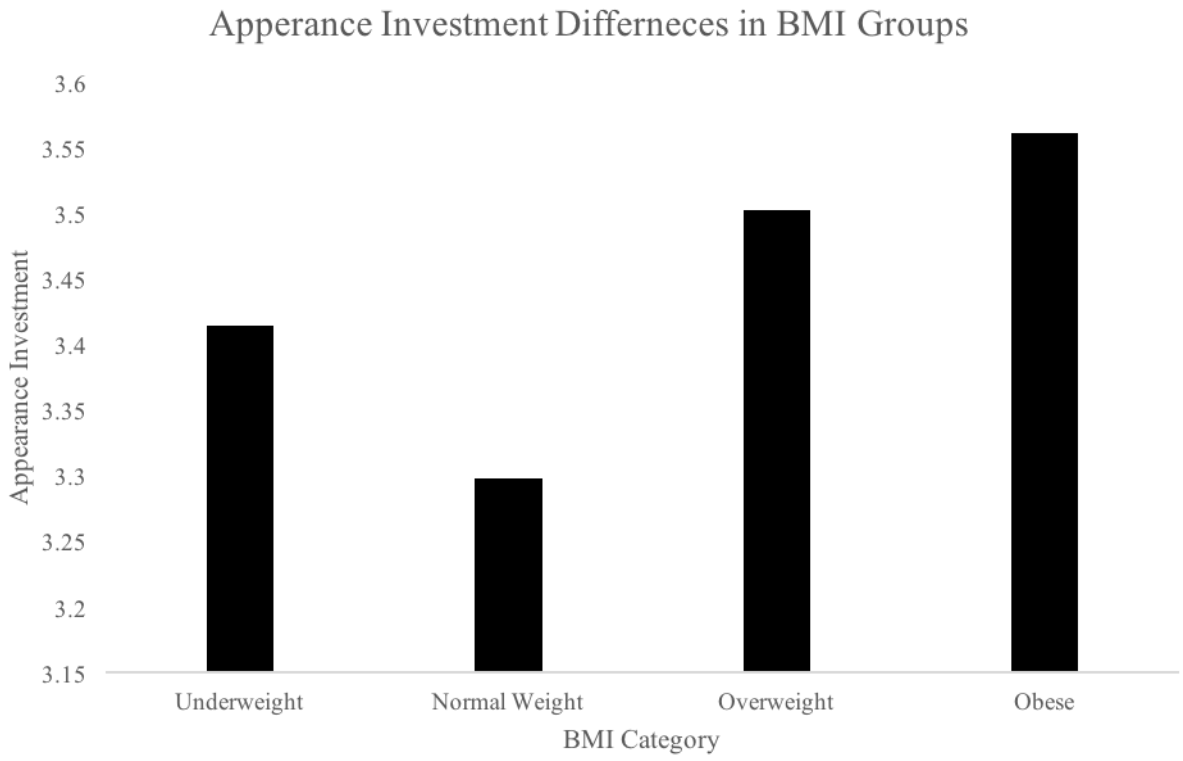

Figure 6. *Differences Among BMI groups in Appearance Investment*

CHAPTER FOUR

DISCUSSION

The current study focused on examining the relationships between appearance investment, appearance-related commentary, appearance satisfaction, body satisfaction, and eating disorder psychopathology. Results indicated several significant relationships among these variables. Appearance investment was significantly associated with frequency and effect of negative weight and shape commentary, frequency and effect of positive weight and shape commentary, effect of positive general appearance commentary, body satisfaction, and appearance satisfaction. Appearance investment, frequency of positive shape and weight commentary, frequency of negative shape and weight commentary, effect of positive shape and weight commentary, and effect of negative shape and weight commentary were all significant predictors of appearance satisfaction. Results also indicated that appearance investment, frequency of positive shape and weight commentary, frequency of positive general appearance commentary, frequency of negative shape and weight commentary, and effect of negative shape and weight commentary were all significant predictors of body satisfaction. In addition to these findings, results demonstrated that appearance investment and effect of negative shape and weight commentary were significant predictors of eating disorder psychopathology. Finally, the results of the study showed that individuals in the overweight and obese weight groups reported higher levels of appearance investment than those in the normal weight group.

Associations between Appearance Investment and Study Variables

Study findings showed there was a significant relationship between appearance investment and frequency of negative shape and weight commentary, such that women who had high appearance investment reported a high frequency of negative shape and weight commentary. This high incidence of negative shape and weight commentary may be related to a high sensitivity to appearance-relevant information in women with high investment as shown in prior studies (Altabe and Thompson, 1996; Geller et al., 1997; Hargreaves and Tiggemann, 2003; Lavin and Cash, 2001). More specifically, women with high appearance investment may report high frequency of negative shape and weight commentary due to its impact on their perceived self-worth. In a study by Forand and colleagues (2010), women who perceived a general interaction as negative were more likely to attribute that negative interaction to their appearance and self-worth. Researchers concluded this could be due to a heightened sense of how others view them. Individuals with high appearance investment may evaluate their self-worth based on many of their interactions with others, including both appearance and non-appearance-related commentary. These individuals may be overly preoccupied with and sensitive to negative feedback and therefore, may report a higher frequency of negative commentary.

Appearance investment was also significantly correlated with the effect of negative shape and weight commentary. Results indicated that women with high appearance investment reported a more negative effect of negative shape and weight commentary. This coincides with past findings where negative messages about the body were interpreted as exceedingly negative (Liang and colleagues, 2011). Furthermore, women with high appearance investment have demonstrated a greater negative reaction

concerning their own bodies than their low investment counterparts after exposure to thin-ideal media via commercials and pictures (Hargreaves & Tiggemann, 2002; Ip & Jarry, 2008). They reported higher levels of body dissatisfaction and greater distress about their appearance than did women with low appearance investment. As with the present study, they were more likely to interpret negative messages as more negative than were women with low appearance investment.

Although the correlation was low, results suggested that higher appearance investment was related to lower frequency of positive shape and weight commentary. Past research has noted that lower frequency of positive shape and weight commentary (Herbozo & Thompson, 2006b; Rodgers et. al, 2009) and high appearance investment (Cash, 2004; Clark & Tiggemann, 2007; Ip & Jarry, 2008) are related to lower levels of appearance satisfaction. Based on these relationships, it may be possible that women with high appearance investment have skewed perceptions with regards to perceiving positive shape and weight commentary. Individuals may perceive such positive commentary at a lower rate due to discounting the amount positive shape and weight commentary that is given to them.

In line with the current finding, other studies have noted that women who have high appearance investment are more likely to report body dissatisfaction via a heightened focus on, recollection of, and assimilation of appearance relevant messages (Altabe and Thompson, 1996). Thus, women who endorsed high appearance investment in the present study seem to be more sensitive to appearance-related commentary. Other research on appearance-related feedback has shown that adolescent females with high appearance investment, in addition to having a greater awareness of appearance-related

messages from the media, also report engaging in more appearance-related interactions with other females (Sinton &Burch, 2006). It is possible that in the current study, women high in appearance investment may have a heightened awareness of positive commentary and may be more likely to engage others about others in appearance-related conversations. Such increased awareness and engagement in appearance-related conversation may lead them to possibly underestimate the frequency or perception of positive shape and weight comments.

In addition to frequency of positive shape and weight commentary, results indicate that appearance investment has a significant relationship with the effect of positive shape and weight commentary. Although this correlation was low, women who had high appearance investment reported a greater positive effect of positive shape and weight commentary. The current finding is consistent with previous research showing that women with high appearance investment have a hyperawareness of feedback concerning their appearance (Cash, et. al, 2002; Cash, Melnyk, et al., 2004). It seems that this finding also indicates that women with low appearance investment are more likely to endorse a negative effect of positive shape and weight commentary. In such cases, women with lover levels of appearance investment are likely engaging in complimentary weightism (Calogero et al, 2009), wherein they perceive positive body-related compliments as negative due to their awareness of being judged solely based on their appearance. Such perceptions have been associated with negative outcomes (Calogero et al., 2009; Herbozo & Thompson, 2006).

The hypothesis that high levels of appearance investment would be related to lower levels of the frequency of positive general appearance commentary was not

supported. This may be due to the content of positive general appearance commentary which focuses on overall appearance comments, not particular aspects of weight and shape. Thus, despite research showing that females with high appearance investment are likely to focus and attune to appearance relevant messages (Altabe and Thompson, 1996; Geller et al., 1997; Hargreaves and Tiggemann, 2003; Lavin and Cash, 2001), it is possible that positive comments addressing weight and shape are more strongly tied to appearance investment than positive comments addressing overall appearance. In addition, positive general appearance comments may not be specific enough with respect to their weight and shape counterparts to be noticed by those with high appearance investment.

While frequency of positive general appearance commentary was not significantly related to appearance investment, effect of positive general appearance commentary did have a significant relationship with appearance investment. Although it was a low correlation, women who had high appearance investment reported greater positive effect of positive general appearance commentary. Similar to the association between positive effect of shape and weight commentary and appearance investment, women with high appearance investment may take positive general appearance feedback as evidence supporting their appearance goals and as a validation of their self-worth. This is in line with a study by Forand and colleagues (2008), wherein women who had high appearance investment were more sensitive to interactions with others. Specifically, when they had communal, friendly interactions with others, they were more likely to report higher self-worth. Similarly, it is possible that if women with high appearance investment are likely

to feel better after positive interactions with others, then they may also be likely to respond more positively to positive general appearance commentary

Appearance investment was also significantly correlated with both appearance satisfaction and body satisfaction. Specifically, women with higher levels of appearance investment reported lower levels of appearance satisfaction and body satisfaction. These findings are consistent with prior research indicating that higher appearance investment (Cash et. al, 2004) and frequency of teasing are both associated with increased levels of body dissatisfaction (Cash, 1995; Anderson, Breshanan & Deangelis, 2014, Liberman, et al., 2001). Hargreaves and Tiggermann, (2002) found that high appearance investment predicted change in body dissatisfaction over a two-year time period, showing that over time, appearance investment may lead to more negative body image. The results of the current study support prior research showing a link between high appearance investment and body image.

Appearance Investment and Appearance-related Commentary as Predictors of Body Image

In order to further assess these relationships, the current study examined appearance investment, frequency of appearance-related commentary, and their interaction as predictors of both appearance satisfaction and body satisfaction. Results showed that college females who endorsed higher levels of appearance investment were subsequently more likely to have lower levels of appearance satisfaction and body satisfaction. Specifically, women who were more likely to hold the belief that their self-worth was tied to their appearance reported poorer body image. This is in accord with

previous findings demonstrating appearance investment to be a significant predictor of body dissatisfaction (Hargreaves and Tiggemann, 2002). Research suggests that women with elevated levels of appearance investment tend to experience a heightened focus-on and assimilation-of appearance relevant messages (Altabe and Thompson, 1996; Geller et al., 1997; Hargreaves and Tiggemann, 2003; Lavin and Cash, 2001), all of which may contribute to greater negative views of their own appearance. Due to this over emphasis on appearance, they tend to experience greater overall distress when placed in situations that trigger appearance concerns (Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002; Cash, Melnyk, et al., 2004).

Study results revealed that when examining frequency of different types of appearance-related commentary as predictors of appearance satisfaction and body satisfaction, higher levels of negative shape and weight commentary significantly predicted lower levels of appearance and body satisfaction. This has been shown in various studies examining both past and current body-related teasing. Prior research has found a higher frequency of teasing to be linked to poor body image, poor self-esteem and more disordered eating behaviors in various populations, including college-aged women (Cash, 1995; Lunner, et al., 2000; Anderson, Breshanan & Deangelis, 2014; Lieberman, et al., 2001). Thus, the current study findings on negative appearance commentary support prior research in this area.

While research has consistently found that increased frequency of negative shape and weight commentary has a negative impact on body image, results concerning positive-appearance related commentary have been inconclusive. Study results indicate that frequency of positive shape and weight commentary is a significant predictor of both

appearance and body satisfaction, such that greater amounts of positive shape and weight commentary predict higher levels of appearance satisfaction and body satisfaction. The current research is in agreement with previous studies that have shown a higher frequency of positive shape and weight commentary to be associated with increased overall appearance satisfaction (Herbozo et. al, 2013; Bailey & Ricciardelli, 2010; Rodgers et. al, 2009). For instance, in adolescent males and females, Rodgers and colleagues (2009) found that higher frequency of positive-related body comments from parents predicted lower body dissatisfaction. Overall, study findings are consistent with past research indicating increased appearance satisfaction and body satisfaction predict greater frequency of positive shape and weight commentary.

Interestingly, the study results found that frequency of positive general appearance commentary was a significant predictor of body satisfaction, but was not a significant predictor of appearance satisfaction. This indicates higher amounts of general appearance related commentary predicted greater body satisfaction but not appearance satisfaction. Body satisfaction refers to satisfaction with specific areas of one's body. In contrast, appearance satisfaction refers to satisfaction with one's overall appearance (Cash, 2000). Cash (1989) has noted that body satisfaction draws from feelings about discrete body parts, and that this contributes uniquely and additively to appearance satisfaction. In the current study, it is likely that high frequency of positive general commentary predicted body satisfaction and not appearance satisfaction due to the nature of each type of satisfaction. It may be that general positive commentary is broad, allowing one to attribute the general positive commentary to an appreciation of body parts. While past research has found that frequency of positive general appearance

commentary predicts higher appearance satisfaction and less body dissatisfaction (Herbozo & Thompson, 2006b; Rodgers, Paxton, & Chabrol, 2009), frequency of positive general appearance commentary did approach significance in the present study. However, it may have fallen short due to its general nature in the presence of negative and positive shape and weight commentary.

In addition to frequency of appearance-related commentary, the current study examined appearance investment, effect of appearance-related commentary, and their interactions as predictors of both appearance satisfaction and body satisfaction. Results indicated that higher levels of appearance investment and greater negative effects of negative shape and weight commentary, alongside greater negative effects of positive shape and weight, all predicted lower levels of appearance satisfaction. Higher levels of appearance investment and greater negative effects of negative shape and weight commentary predicted lower levels of body satisfaction.

Study results indicated that the effect of negative shape and weight commentary was found to be a significant predictor of appearance satisfaction and body satisfaction. More specifically, negative effect of negative shape and weight commentary predicted lower levels of appearance satisfaction and body satisfaction. These findings coincide with previous research demonstrating that negative effects of negative weight and shape commentary are significant predictors of low satisfaction with physical appearance and fear of negative judgment (Cash, 2005; Furman & Thompson, 2002; Liang, et. al, 2011). Further, a more negative effect of body criticisms, has been strongly associated with harmful outcomes, such as higher levels of body dissatisfaction and body surveillance among women (Calogero et. al, 2009). The current study findings are in line with past

research indicating the negative effect of commentary is linked to poor body image and self-objectification.

With regards to positive commentary, results indicated that effect of positive shape and weight commentary was a significant predictor of appearance satisfaction but was not predictive of body satisfaction. More negative effects of positive shape and weight commentary were predictive of lower levels of appearance satisfaction. This finding is congruent with those of previous studies that showed positive commentary is linked to lower levels of body satisfaction and higher levels of body shame (Calogero et. al, 2009; Slater & Tiggemann 2015, Tiggemann & Boundry, 2008). These studies suggest that despite the complimentary nature of positive body-related comments, such comments can actually serve as reminder that others are evaluating one's physical appearance, which may contribute a greater focus on appearance and associated negative outcomes. Calogero and colleagues (2009) have referred to this effect of positive commentary as *complimentary weightism.* The current study supports this notion and highlights the importance of examining the effect of positive feedback in addition to frequency.

The finding concerning the effect of positive shape and weight comments is also in-line with objectification theory, which stipulates that "women are acculturated to internalize an observer's perspective as a primary view of their physical selves (Fredrickson & Roberts, 1997)." The theory proposes that women's lives and bodies are viewed through a sociocultural lens that focuses on their bodies, often equating a woman's self-worth with her appearance, and with a specific focus towards highlighting her body's sexual functions. Consistent with this theory, positive shape and weight

commentary draws attention to a woman's appearance, and predicted a negative effect on appearance satisfaction in the current study.

In contrast to positive weight and shape commentary, study results indicated that effect of positive general appearance commentary was not a significant predictor of appearance satisfaction or body satisfaction. This finding is surprising as past research has demonstrated that effect of positive general appearance commentary significantly predicted appearance satisfaction and body dissatisfaction in college females (Herbozo & Thompson, 2006b). In the present study, it is possible that when tested as a predictor alongside negative shape and weight commentary and positive shape and weight commentary, positive general commentary was not specific enough to be predictive of appearance satisfaction and body satisfaction. The effect of both positive and negative weight and shape commentary may hold more predictive value than positive general appearance commentary due to their specificity in feedback directly about body areas.

Appearance Investment and Appearance-related Commentary as Predictors of Eating Disorder Psychopathology

In addition to being a significant predicator of appearance satisfaction and body satisfaction, appearance investment was a significant predictor of eating disorder psychopathology when examined with appearance-related commentary. Research has consistently shown that appearance investment is an important variable in the development of eating disorder psychopathology (Cash, Melnyk, et al., 2004; Chang, et al., 2014; Lamarche & Gammage, 2012; Hargreaves & Tiggemann, 2003; Lavin and Cash, 2001; Williamson, Muller, Reas, & Thaw, 1999). Chang and colleagues (2014)

found the relationship between fear of negative evaluation and dietary restraint was mediated by appearance investment. As found in the current study, women who were high in appearance investment were more likely to engage in eating disorder psychopathology, specifically dietary restraint behaviors, than females with low appearance investment. Further, Tiggemann (2005) reported that appearance investment was significantly related to the drives for thinness and bulimic behaviors. These findings indicated that women who were high in appearance investment were likely to have a higher susceptibility for thin-ideal internalization and were thus more likely to engage in unhealthy behaviors such as dietary restraint, bingeing, and purging.

In addition to appearance investment, negative effect of negative shape and weight commentary was also demonstrated as a significant predictor of eating disorder psychopathology. Higher negative effect of negative shape and weight commentary predicted higher amounts of eating disorder psychopathology. This finding is concurrent with prior research showing negative shape and weight commentary and appearance related teasing to be significantly associated with dieting and binge eating behaviors amongst female adolescents (Ata et al., 2007). Additionally, negative shape and weight commentary and criticism have been linked to dieting and binging behaviors in college aged women (Benas & Gibb, 2008, Stormer & Thompson, 1996, Thompson & Heinberg, 1993).

It is important to note that neither effect of positive shape and weight commentary nor positive general appearance commentary were shown to be significant predictors of eating disorder psychopathology. This finding is consistent with past research that showed positive comments did not significantly predict eating disturbance in young

women (Bailey and Ricciardelli, 2010). Other researchers have postulated that the lack of relationship between the effect of positive general appearance commentary and eating disorder psychopathology could be due to positive appearance commentary having a less salient message for women when compared to negative appearance commentary (Bailey and Ricciardelli, 2010; McLaren et al., 2004). Given the limited research examining positive appearance comments and eating disorder psychopathology, future studies should continue to investigate these factors to better understand the nature of their relationships.

Appearance Investment among BMI Groups

Due to the limited research on the relationships between appearance investment and BMI in college aged females, the current study also explored potential differences in appearance investment among weight status groups (i.e. underweight, normal weight, overweight, and obese). No hypothesis was proposed for this aim due to the few studies in this area. Results indicated that there were significant differences in appearance investment between the four BMI groups. Individuals in the overweight and obese groups reported significantly higher levels of appearance investment than those in the normal weight group. This finding is consistent with a longitudinal study by Clark and Tiggemann (2008) that found preadolescent and adolescent females with higher BMI had greater propensities for internalizing appearance ideals and investment. This internalization was linked to lower body esteem and a higher desire to be thin.

These findings also support prior research on the development of the Appearance Schemas Inventory-Revised (Cash, 2004). This scale development study showed a

significant correlation between the self-evaluative salience factor of appearance investment and BMI. This finding indicated that higher BMI values were associated with higher levels of attributing appearance as a main factor for self-worth. The current study findings are in consensus with past research indicating women in higher weight classes may have greater appearance investment, and subsequently, lower body esteem (Cash, 2004).

Limitations and Strengths of the Current Study

The current study has limitations that are important to consider. First, the study findings are only generalizable to college women between the ages of 18 to 26. This population was selected due to the high rates of eating disorder psychopathology in this age group for women (Quick, Berg, Bucchianeri, & Byrd-Bredbenner, 2014). Second, the study is cross-sectional, which does not allow for casual explanations. Third, data was collected using self-report and may be influenced by recall bias and social desirability.

Despite these limitations, this study does have some notable strengths. The results of the current study make important contributions to the literature on appearance investment and appearance-related commentary by examining aspects of both areas together. While the study is limited to college-aged women 18 to 26, the participants were from three university campuses, which may increase generalizability within this population. Further, the current study examined the influence of both appearance investment and appearance-related commentary on body image. Differences in

appearance investment across BMI groups were also examined, which highlights the importance of considering BMI.

Summary of Study Results and Clinical Implications

The present study showed that high appearance investment, as well as negative effects of both positive and negative body-related commentary, predicted lower appearance satisfaction and body satisfaction. Findings also indicated that high appearance investment and the negative effect of negative appearance-related commentary predicted higher levels of eating disorder psychopathology. These results are in line with previous research indicating strong links between appearance investment, low appearance satisfaction, and body satisfaction in predicting higher eating disorder psychopathology (Bailey and Ricciardelli, 2010; Ata et al, 2007). Further, studying findings support research showing that appearance investment and negative effect of negative shape and weight commentary contribute to higher levels of eating disorder psychopathology (Calogero et al., 2009; Bailey and Ricciardelli, 2010; Clark and Tiggemann, 2015;).

Study findings highlighted the potential need to consider addressing appearance investment and body-related commentary in intervention efforts for body image and eating disturbances. It may be beneficial to discuss the effects of body-related commentary on the recipient and how it influences her appearance investment. Specifically, cognitive therapy strategies could be used to decrease potential negative effects of appearance-related commentary. Such strategies may help increase levels of appearance and body satisfaction, which may in turn decrease levels of eating disorder

psychopathology. Given the negative outcomes associated with appearance-related commentary, greater attention should be given to reducing the potential harmful effects of such commentary in intervention efforts for body image and eating disturbance.

Future Directions

The significant relationships between appearance investment and appearance-related commentary are important to examine in order to increase our understanding of body image and eating disorder psychopathology. Research has shown that sociocultural influences, such as appearance-related commentary, may increase the emphasis that some females place on appearance (Calogero et al., 2009). The perception of such commentary is especially important given that negative perceptions have been associated with body dissatisfaction and body surveillance (Calogero et al., 2009). Appearance investment has also demonstrated partial or full mediation with sociocultural factors predicting poor body image in adolescents (Clark and Tiggemann, 2015). Future studies should further investigate the influence of appearance investment and appearance-related commentary on negative outcomes including poor body image and eating disorder psychopathology. Additional research is needed with college women as well as females and males of different age and ethnic groups. Such research may help inform intervention efforts for body image and eating disturbances.

REFERENCES

Akkermann, K., Hiio, K., Villa, I., & Harro, J. (2011). Food restriction leads to binge eating dependent upon the effect of the brain-derived neurotrophic factor Val66Met polymorphism. *Psychiatry Research, 185*(1-2), 39-43. doi: 10.1016/j.psychres.2010.04.024

Altabe, M., & Thompson, J. K. (1996). Body image: A cognitive self-schema construct? *Cognitive Therapy and Research, 20*(2), 171-193.

Anderson, J., Bresnahan, M. J., & DeAngelis, B. N. (2014). The impact of personal metaphors and memorable interpersonal communication on body satisfaction. *Qualitative Health Research, 24*(6), 727-737.

Annis, N. M., Cash, T. F., & Hrabosky, J. I. (2004). Body image and psychosocial differences among stable average weight, currently overweight, and formerly overweight women: The role of stigmatizing experiences. *Body Image, 1*(2), 155-167.

Ata, R. N., Ludden, A. B., & Lally, M. M. (2007). The effects of gender and family, friend, and media influences on eating behaviors and body image during adolescence. *Journal of Youth and Adolescence, 36*(8), 1024-1037.

Bailey, S. D., & Ricciardelli, L. A. (2010). Social comparisons, appearance related comments, contingent self-esteem and their relationships with body dissatisfaction and eating disturbance among women. *Eating Behaviors, 11*(2), 107-112.

Barker, E. T., & Galambos, N. L. (2003). Body dissatisfaction of adolescent girls and boys: Risk and resource factors. *The Journal of Early Adolescence, 23*(2), 141-165.

Beato-Fernández, L., Rodríguez-Cano, T., Belmonte-Llario, A., & Martínez-Delgado, C. (2004). Risk factors for eating disorders in adolescents. *European Child & Adolescent Psychiatry, 13*(5), 287-294.

Benas, J. S., & Gibb, B. E. (2008). Weight-related teasing, dysfunctional cognitions, and symptoms of depression and eating disturbances. *Cognitive Therapy and Research, 32*(2), 143-160.

Boersma, K. E., & Jarry, J. L. (2013). The paradoxical moderating effect of body image investment on the impact of weight-based derogatory media. *Body Image, 10*(2), 200-209.

Brown, A., & Dittmar, H. (2005). Think 'thin' and feel bad: The role of appearance schema activation, attention level, and thin-ideal internalization for young

women's responses to ultra-thin media ideals. Journal of Social and Clinical Psychology, 24(8), 1088-1113.

Calogero, R. M., Herbozo, S., & Thompson, J. K. (2009). Complimentary weightism: The potential costs of appearance-related commentary for women's self-objectification. *Psychology of Women Quarterly*, *33*(1), 120-132

.

Carraça, E. V., Markland, D., Silva, M. N., Coutinho, S. R., Vieira, P. N., Minderico, C. S., . . . Teixeira, P. J. (2011). Dysfunctional body investment versus body dissatisfaction: Relations with well-being and controlled motivations for obesity treatment. Motivation and Emotion, 35(4), 423-434.

Carriere, L. J., & Kluck, A. S. (2014). Appearance commentary from romantic partners: Evaluation of an adapted measure. Body Image, 11(2), 137-145.

Cash, T. F. (1995). Developmental teasing about physical appearance: Retrospective descriptions and relationships with body image. *Social Behavior and Personality, 23*(2), 123-129.

Cash, T. F. (2000). Body image. In A. E. Kazdin (Ed.), *Encyclopedia of psychology, Vol. 1.* (pp. 436-439). Washington, DC, US; New York, NY, US: American Psychological Association. Oxford University Press.

Cash, T. F. (2002). Cognitive-behavioral perspectives on body image. *Body image: A handbook of theory, research, and clinical practice*, 38-46.

Cash, T. F. (2004). Body image: Past, present, and future. *Body Image*, *1*(1), 1-5.

Cash, T. F. (2005). The influence of sociocultural factors on body image: Searching for constructs. *Clinical Psychology: Science and Practice*, *12*(4), 438-442. Cash, T. F. (2012). Encyclopedia of body image and human appearance (Vol. 1). San Diego, CA, US: Elsevier Academic Press.

Cash, T. F., & Henry, P. E. (1995). Women's body images: The results of a national survey in the USA. Sex Roles, 33(1-2), 19-28.

Cash, T. F., Jakatdar, T. A., & Williams, E. F. (2004). The Body Image Quality of Life Inventory: Further validation with college men and women. Body Image, 1(3), 279-287.

Cash, T. F., & Labarge, A. S. (1996). Development of the Appearance Schemas Inventory: A new cognitive body-image assessment. Cognitive Therapy and Research, 20(1), 37-50.

Cash, T. F., Melnyk, S. E., & Hrabosky, J. I. (2004). The Assessment of Body Image Investment: An Extensive Revision of the Appearance Schemas Inventory. International Journal of Eating Disorders, 35(3), 305-316.

Cash, T. F., Fleming, E. C., Alindogan, J., Steadman, L., & Whitehead, A. (2002). Beyond body image as a trait: The development and validation of the Body Image States Scale. *Eating Disorders, 10*(2), 103-113.

Cash, T. F., Fleming, E. C., Alindogan, J., Steadman, L., & Whitehead, A. (2002). Beyond body image as a trait: The development and validation of the Body Image States Scale. *Eating Disorders, 10*(2), 103-113.

Cash, T. F., & Henry, P. E. (1995). Women's body images: The results of a national survey in the USA. *Sex Roles, 33*(1-2), 19-28.

Cash, T. F., Jakatdar, T. A., & Williams, E. F. (2004). The Body Image Quality of Life Inventory: Further validation with college men and women. *Body Image, 1*(3), 279-287.

Cash, T. F., & Labarge, A. S. (1996). Development of the Appearance Schemas Inventory: A new cognitive body-image assessment. *Cognitive Therapy and Research, 20*(1), 37-50.

Cash, T. F., Melnyk, S. E., & Hrabosky, J. I. (2004). The Assessment of Body Image Investment: An Extensive Revision of the Appearance Schemas Inventory. *International Journal of Eating Disorders, 35*(3), 305-316.

Cash, T. F., Phillips, K. A., Santos, M. T., & Hrabosky, J. I. (2004). Measuring "negative body image": validation of the Body Image Disturbance Questionnaire in a nonclinical population. *Body Image, 1*(4), 363-372.

Cash, T. F., Thériault, J., & Annis, N. M. (2004). Body image in an interpersonal context: Adult attachment, fear of intimacy, and social anxiety. *Journal of Social and Clinical Psychology, 23*(1), 89-103.

Castonguay, A. L., Brunet, J., Ferguson, L., & Sabiston, C. M. (2012). Weight-related actual and ideal self-states, discrepancies, and shame, guilt, and pride: Examining associations within the process model of self-conscious emotions. *Body Image, 9*(4), 488-494.

Chang, V. W., & Christakis, N. A. (2003). Self-perception of weight appropriateness in the United States. American journal of preventive medicine, 24(4), 332-339.

Chang, F. M., Jarry, J. L., & Kong, M. A. (2014). Appearance investment mediates the association between fear of negative evaluation and dietary restraint. *Body Image, 11*(1), 72-76.

Chao, Y. H., Pisetsky, E. M., Dierker, L. C., Dohm, F. A., Rosselli, F., May, A. M., & Striegel‐Moore, R. H. (2008). Ethnic differences in weight control practices

among US adolescents from 1995 to 2005. International Journal of Eating Disorders, 41(2), 124-133.

Clark, L., & Tiggemann, M. (2007). Sociocultural Influences and Body Image in 9- to 12-Year-Old Girls: The Role of Appearance Schemas. Journal of Clinical Child and Adolescent Psychology, 36(1), 76-86.

Clark, L., & Tiggemann, M. (2008). Sociocultural and individual psychological predictors of body image in young girls: a prospective study. Developmental psychology, 44(4), 1124.

Coomber, K., & King, R. M. (2008). The role of sisters in body image dissatisfaction and disordered eating. Sex Roles, 59(1-2), 81-93.

DeLeel, M. L., Hughes, T. L., Miller, J. A., Hipwell, A., & Theodore, L. A. (2009). Prevalence of eating disturbance and body image dissatisfaction in young girls: An examination of the variance across racial and socioeconomic groups. Psychology in the Schools, 46(8), 767-775.

Dunkley, T. L., Wertheim, E. H., & Paxton, S. J. (2001). Examination of a model of multiple sociocultural influences on adolescent girls' body dissatisfaction and dietary restraint. *Adolescence*.

Engeln-Maddox, R., Salk, R. H., & Miller, S. A. (2012). Assessing women's negative commentary on their own bodies: A psychometric investigation of the Negative Body Talk Scale. *Psychology of Women Quarterly, 36*(2), 162-178.

Eyal, K., & Te'eni-Harari, T. (2013). Explaining the relationship between media exposure and early adolescents' body image perceptions: The role of favorite characters. Journal of Media Psychology: Theories, Methods, and Applications, 25(3), 129-141.

Evans, E. H., Tovée, M. J., Boothroyd, L. G., & Drewett, R. F. (2013). Body dissatisfaction and disordered eating attitudes in 7- to 11-year-old girls: Testing a sociocultural model. *Body Image, 10*(1), 8-15.

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionaire? *International Journal of Eating Disorders, 16*, 363-370.

Fallon, E. A., Harris, B. S., & Johnson, P. (2014). Prevalence of body dissatisfaction among a United States adult sample. Eating Behaviors, 15(1), 151-158.

Fea, C. J., & Brannon, L. A. (2006). Self-objectification and compliment type: Effects on negative mood. *Body Image, 3*(2), 183-188.

Ferreiro, F., Seoane, G., & Senra, C. (2014). Toward understanding the role of body dissatisfaction in the gender differences in depressive symptoms and disordered

eating: A longitudinal study during adolescence. *Journal of Adolescence, 37*(1), 73-84.

Fisher, E., Dunn, M., & Thompson, J. K. (2002). Social comparison and body image: An investigation of body comparison processes using multidimensional scaling. *Journal of Social and Clinical Psychology, 21*(5), 566-579.

Forand, N. R., Gunthert, K. C., German, R. E., & Wenze, S. J. (2010). Appearance investment and everyday interpersonal functioning: An experience sampling study. *Psychology of Women Quarterly, 34*(3), 380-393.

Forney, K. J., & Ward, R. M. (2013). Examining the moderating role of social norms between body dissatisfaction and disordered eating in college students. *Eating Behaviors, 14*(1), 73-78.

Francisco, R., Narciso, I., & Alarcão, M. (2013). Parental influences on elite aesthetic athletes' body image dissatisfaction and disordered eating. *Journal of Child and Family Studies, 22*(8), 1082-1091.

Frederick, D. A. & Gray, P. B.,(2012). Body image and body type preferences in St. Kitts, Caribbean: A cross-cultural comparison with U.S. samples regarding attitudes towards muscularity, body fat, and breast size. Evolutionary Psychology, 10(3), 631-655.

Furman, K., & Thompson, J. K. (2002). Body image, teasing, and mood alterations: An experimental study of exposure to negative verbal commentary. *International Journal of Eating Disorders, 32*(4), 449-457.

Gardner, R. M., & Boice, R. (2004). A computer program for measuring body size distortion and body dissatisfaction. *Behavior Research Methods, Instruments, & Computers, 36*(1), 89-95.

Gardner, R. M., Stark, K., Friedman, B. N., & Jackson, N. A. (2000). Predictors of eating disorder scores in children ages 6 through 14: A longitudinal study.*Journal of psychosomatic research, 49*(3), 199-205.

Garrow, J. S., & Webster, J. (1984). Quetelet's index (W/H2) as a measure of fatness. International journal of obesity, 9(2), 147-153.

Geller, J., Johnston, C., & Madsen, K. (1997). The role of shape and weight in self-concept: The shape and weight based self-esteem inventory. *Cognitive Therapy and Research, 21*(1), 5-24.

Gilbert, N., & Meyer, C. (2005). Fear of negative evaluation and eating attitudes: A replication and extension study. International Journal of Eating Disorders, 37(4), 360-363.

Griffiths, S., Angus, D., Murray, S. B., & Touyz, S. (2014). Unique associations between young adult men's emotional functioning and their body dissatisfaction and disordered eating. *Body Image, 11*(2), 175-178.

Giovannelli, T. S., Cash, T. F., Henson, J. M., & Engle, E. K. (2008). The measurement of body-image dissatisfaction-satisfaction: Is rating importance important? Body Image, 5(2), 216-223.

Glauert, R., Rhodes, G., Byrne, S., Fink, B., & Grammer, K. (2009). Body dissatisfaction and the effects of perceptual exposure on body norms and ideals. International Journal of Eating Disorders, 42(5), 443-452.

Gleason, J. H., Alexander, A. M., & Somers, C. L. (2000). Later adolescents reactions to three types of childhood teasing: RELATIONS WITH SELF-ESTEEM AND BODY IMAGE. *Social Behavior and Personality: an international journal*, *28*(5), 471-479.

Grogan, S. (2008). Body image: Understanding body dissatisfaction in men, women and children. Routledge.

Gross, R. M., & Nelson, E. S. (2000). Perceptions of parental messages regarding eating and weight and their impact on disordered eating. *Journal of college student psychotherapy*, *15*(2), 57-78.

Hardin, E. E., & Larsen, J. T. (2014). Distinct sources of self-discrepancies: Effects of being who you want to be and wanting to be who you are on well-being. Emotion, 14(1), 214-226.

Hargreaves, D., & Tiggemann, M. (2002). The effect of television commercials on mood and body dissatisfaction: The role of appearance-schema activation. *Journal of Social and Clinical Psychology, 21*(3), 287-308.

Hargreaves, D., & Tiggemann, M. (2002). The role of appearance schematicity in the development of adolescent body dissatisfaction. *Cognitive Therapy and Research*, *26*(6), 691-700.

Hargreaves, D., & Tiggemann, M. (2003). The effect of “thin ideal” television commercials on body dissatisfaction and schema activation during early adolescence. *Journal of youth and adolescence*, *32*(5), 367-373.

Heatherton, T. F., Mahamedi, F., Striepe, M., Field, A. E., & Keel, P. (1997). A 10-year longitudinal study of body weight, dieting, and eating disorder symptoms. *Journal of Abnormal Psychology*, *106*(1), 117.

Herbozo, S., Menzel, J. E., & Thompson, J. K. (2013). Differences in appearance-related commentary, body dissatisfaction, and eating disturbance among college women of varying weight groups. *Eating Behaviors, 14*(2), 204-206.

Herbozo, S., & Thompson, J. K. (2006a). Appearance-related commentary, body image, and self-esteem: Does the distress associated with the commentary matter? *Body Image, 3*(3), 255-262.

Herbozo, S., & Thompson, J. K. (2006b). Development and validation of the verbal commentary on physical appearance scale: Considering both positive and negative commentary. *Body Image, 3*(4), 335-344.

Herbozo, S., & Thompson, J. K. (2009). Positive and negative appearance-related feedback and weight status. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 14*(4), 234-236.

Herbozo, S., & Thompson, J. K. (2010). The effects of ambiguous appearance-related feedback on body image, mood states, and intentions to use body change strategies in college women: An experimental study. *Body Image, 7*(4), 327-334.

Heron, K. E., & Smyth, J. M. (2013). Body image discrepancy and negative affect in women's everyday lives: An ecological momentary assessment evaluation of self discrepancy theory. Journal of Social and Clinical Psychology, 32(3), 276-295.

Hildebrandt, T., Shiovitz, R., Alfano, L., & Greif, R. (2008). Defining body deception and its role in peer based social comparison theories of body dissatisfaction. Body Image, 5(3), 299-306.

Hoffman, J. M., & Brownell, K. D. (1997). Sex differences in the relationship of body fat distribution with psychosocial variables. International Journal of Eating Disorders, 22(2), 139-145.

Ip, K., & Jarry, J. L. (2008). Investment in body image for self-definition results in greater vulnerability to the thin media than does investment in appearance management. *Body Image, 5*(1), 59-69.

Johnson, F., & Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: a prospective analysis. Journal of abnormal psychology, 114(1), 119.

Johnson, J. G., Cohen, P., Smailes, E. M., Kasen, S., & Brook, J. S. (2002). Television viewing and aggressive behavior during adolescence and adulthood.*Science*, *295*(5564), 2468-2471.

Jung, J., & Lee, S.-H. (2006). Cross-Cultural Comparisons of Appearance Self-Schema, Body Image, Self-Esteem, and Dieting Behavior Between Korean and U.S. Women. *Family and Consumer Sciences Research Journal, 34*(4), 350-365.

Jung, J., & Lennon, S. J. (2003). Body Image, Appearance Self-Schema, and Media Images. *Family and Consumer Sciences Research Journal, 32*(1), 27-51.

Klemchuk, H. P., Hutchinson, C. B., & Frank, R. I. (1990). Body dissatisfaction and eating-related problems on the college campus: Usefulness of the Eating Disorder Inventory with a nonclinical population. *Journal of Counseling Psychology*, *37*(3), 297.

Krayer, A., Ingledew, D., & Iphofen, R. (2008). Social comparison and body image in adolescence: A grounded theory approach. *Health Education Research*, *23*(5), 892-903.

Labarge, A. S., Cash, T. F., & Brown, T. A. (1998). Use of a modified Stroop task to examine appearance-schematic information processing in college women. *Cognitive Therapy and Research, 22*(2), 179-190.

Lamarche, L., & Gammage, K. L. (2012). Predicting exercise and eating behaviors from appearance evaluation and two types of investment. *Sport, Exercise, and Performance Psychology, 1*(3), 145-157.

Lavin, M. A., & Cash, T. F. (2001). Effects of exposure to information about appearance stereotyping and discrimination on women's body images. International Journal of Eating Disorders, 29(1), 51-58.

Lawler, M., & Nixon, E. (2011). Body dissatisfaction among adolescent boys and girls: the effects of body mass, peer appearance culture and internalization of appearance ideals. Journal of youth and adolescence, 40(1), 59-71.

Levinson, C. A., & Rodebaugh, T. L. (2012). Social anxiety and eating disorder comorbidity: The role of negative social evaluation fears. Eating behaviors, 13(1), 27-35.

Liang, V. X., Jackson, A. C., & McKenzie, V. L. (2011). The effects of teasing in childhood or adolescence on young adults' body image. The Australian Educational and Developmental Psychologist, 28(02), 101-115.

Lieberman, M., Gauvin, L., Bukowski, W. M., & White, D. R. (2001). Interpersonal influence and disordered eating behaviors in adolescent girls: The role of peer modeling, social reinforcement, and body-related teasing. *Eating Behaviors, 2*(3), 215-236.

Loth, K. A., MacLehose, R., Bucchianeri, M., Crow, S., & Neumark-Sztainer, D. (2014). Predictors of dieting and disordered eating behaviors from adolescence to young adulthood. *Journal of Adolescent Health*.

Lunner, K., Werthem, E. H., Thompson, J. K., Paxton, S. J., McDonald, F., & Halvaarson, K. S. (2000). A cross-cultural examination of weight-related teasing, body image, and eating disturbance in Swedish and Australian samples. *International Journal of Eating Disorders, 28*(4), 430-435.

Markey, C. N. (2010). Invited commentary: Why body image is important to adolescent development. Journal of Youth and Adolescence, 39(12), 1387-1391.

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of personality and social psychology*, *35*(2), 63.

Markus, H., & Nurius, P. (1986). Possible selves. *American psychologist*, *41*(9), 954.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological review*, *98*(2), 224.

Matera, C., Nerini, A., & Stefanile, C. (2013). The role of peer influence on girls' body dissatisfaction and dieting. *European Review of Applied Psychology / Revue Européenne de Psychologie Appliquée*, *63*(2), 67-74.

McCreary, D. R., & Sasse, D. K. (2000). An exploration of the drive for muscularity in adolescent boys and girls. Journal of American College Health, 48(6), 297-304.

McLaren, L., Kuh, D., Hardy, R., & Gauvin, L. (2004). Positive and negative body-related comments and their relationship with body dissatisfaction in middle-aged women. *Psychology & Health*, *19*(2), 261-272.

Melnyk, S. E., Cash, T. F., & Janda, L. H. (2004). Body image ups and downs: Prediction of intra-individual level and variability of women's daily body image experiences. *Body Image*, *1*(3), 225-235.

Menzel, J. E., Schaefer, L. M., Burke, N. L., Mayhew, L. L., Brannick, M. T., & Thompson, J. K. (2010). Appearance-related teasing, body dissatisfaction, and disordered eating: A meta-analysis. *Body Image, 7*(4), 261-270.

Moreno, A. B., & Thelen, M. H. (1993). A preliminary prevention program for eating disorders in a junior high school population. *Journal of Youth and Adolescence*, *22*(2), 109-124.

Morgan, A. Z., Keiley, M. K., Ryan, A. E., Radomski, J. G., Gropper, S. S., Connell, L. J., . . . Ulrich, P. V. (2012). Eating regulation styles, appearance schemas, and body satisfaction predict changes in body fat for emerging adults. Journal of Youth and Adolescence, 41(9), 1127-1141.

Neighbors, L. A., & Sobal, J. (2007). Prevalence and magnitude of body weight and shape dissatisfaction among university students. Eating behaviors, 8(4), 429-439.

Nowell, C., & Ricciardelli, L. A. (2008). Appearance-based comments, body dissatisfaction and drive for muscularity in males. *Body Image, 5*(4), 337-345.

Paxton, S. J., Schutz, H. K., Wertheim, E. H., & Muir, S. L. (1999). Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviors, and binge eating in adolescent girls. *Journal of Abnormal Psychology, 108*(2), 255.

Pomeroy, C. (2004). Assessment of medical status and physical factors. Handbook of eating disorders and obesity, 81-111.

Prichard, I., & Tiggemann, M. (2011). Appearance investment in Australian brides-to-be. *Body Image, 8*(3), 282-286.

Quick, V. M., Berg, K. C., Bucchianeri, M. M., & Byrd-Bredbenner, C. (2014). Identification of eating disorder pathology in college students: A comparison of DSM-IV-TR and DSM-5 diagnostic criteria. *Advances in Eating Disorders: Theory, Research and Practice*, *2*(2), 112-124.doi:10.1080/21662630.2013.869388

Rayner, K. E., Schniering, C. A., Rapee, R. M., & Hutchinson, D. M. (2013). A longitudinal investigation of perceived friend influence on adolescent girls' body dissatisfaction and disordered eating. *Journal of Clinical Child and Adolescent Psychology*, *42*(5), 643-656.

Ricciardelli, L. A., & McCabe, M. P. (2001). Children's body image concerns and eating disturbance: A review of the literature. Clinical psychology review, 21(3), 325-344.

Rodgers, R. F., Paxton, S. J., & Chabrol, H. (2009). Effects of parental comments on body dissatisfaction and eating disturbance in young adults: A sociocultural model. *Body Image, 6*(3), 171-177.

Rodin, J., Silberstein, L., Striegel-Moore, R., Sonderegger, T. B., & Anastasi, A. (1985). Psychology and gender. Psychology and gender.

Schutz, H. K., Paxton, S. J., & Wertheim, E. H. (2002). Investigation of Body Comparison Among Adolescent Girls1. *Journal of Applied Social Psychology*, *32*(9), 1906-1937.

Schwartz, D. J., Phares, V., Tantleff-Dunn, S., & Thompson, J. K. (1999). Body image, psychological functioning, and parental feedback regarding physical appearance. *International Journal of Eating Disorders*, *25*(3), 339-343.

Sharpe, H., Damazer, K., Treasure, J., & Schmidt, U. (2013). What are adolescents' experiences of body dissatisfaction and dieting, and what do they recommend for prevention? A qualitative study. *Eating and Weight Disorders, 18*(2), 133-141.

Shisslak, C. M., Crago, M., McKNIGHT, K. M., Estes, L. S., Gray, N., & Parnaby, O. G. (1998). Potential risk factors associated with weight control behaviors in

elementary and middle school girls. *Journal of psychosomatic research*, *44*(3), 301-313.

Siegel, J. M. (2002). Body image change and adolescent depressive symptoms. Journal of Adolescent Research, 17(1), 27-41.

Sinton, M. M., & Birch, L. L. (2006). Individual and sociocultural influences on pre-adolescent girls' appearance schemas and body dissatisfaction. *Journal of Youth and Adolescence*, *35*(2), 157-167.

Slater, A., & Tiggemann, M. (2015). Media exposure, extracurricular activities, and appearance-related comments as predictors of female adolescents' self-objectification. *Psychology of Women Quarterly*, *39*(3), 375-389.

Smolak, L. (2004). Body image in children and adolescents: where do we go from here? *Body Image, 1*(1), 15-28.

Smolak, L., & Levine, M. P. (2001). Body image in children. *Body image, eating disorders, and obesity in youth: Assessment, prevention, and treatment*, 41-66.

Stein, K. F. (1996). The self-schema model: A theoretical approach to the self-concept in eating disorders. *Archives of Psychiatric Nursing, 10*, 96-109.

Stice, E. (2002). Risk and maintenance factors for eating pathology: a meta-analytic review. *Psychological bulletin*, 128(5), 825.

Stice, E., Presnell, K., & Spangler, D. (2002). Risk factors for binge eating onset in adolescent girls: a 2-year prospective investigation. *Health Psychology*, 21(2), 131.

Stromer, S. M., & Thompson, J. K. (1996). Evaluations of body image disturbance: A test of maturational status, negative verbal commentary, social comparison, and sociocultural hypotheses. *International Journal of Eating Disorders*, *19*, 193-202.

Swanson, S. A., Crow, S. J., Le Grange, D., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and correlates of eating disorders in adolescents: Results from the national comorbidity survey replication adolescent supplement.*Archives of General Psychiatry*, *68*(7), 714-723.

Tantleff-Dunn, S., Thompson, J. K., & Dunn, M. E. (1995). The Feedback on Physical Appearance Scale (FOPAS): questionnaire development and psychometric evaluation. *Eating Disorders*, *3*(4), 332-341.

Thompson, A., & Kent, G. (2001). Adjusting to disfigurement: processes involved in dealing with being visibly different. Clinical Psychology Review, 21(5), 663-682.

Thompson, J. K. (2009). Special issue: Commentary. Journal of Social and Clinical Psychology, 28(1), 127-132.

Thompson, J. K., Cattarin, J., Fowler, B., & Fisher, E. (1995). The perception of teasing scale (POTS): A revision and extension of the physical appearance related teasing scale (PARTS). Journal of Personality Assessment, 65(1), 146-157.

Thompson, J. K., & Coovert, M. D. (1999). Body image, social comparison, and eating disturbance: A covariance structure modeling investigation. *International Journal of Eating Disorders, 26*(1), 43-51.

Thompson, J. K., Fabian, L. J., Moulton, D., & Dunn, M. (1991). A questionaire for the assessment of physical appearnce related teasng history. *Journal of Personality Assessment, 56*, 513-521.

Thompson, J. K., Herbozo, S., Himes, S., & Yamamiya, Y. (2005). Effects of weight-related teasing in adults. *Weight bias: Nature, consequences, and remedies*, 137-149.

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999).*Exacting beauty: Theory, assessment, and treatment of body image disturbance*. American Psychological Association.

Tiggemann, M. (2005). Body dissatisfaction and adolescent self-esteem: Prospective findings. *Body image*, *2*(2), 129-135.

Tiggemann, M. (2006). Nonreporting of Body Mass Index: A Research Note on the Interpretation of Missing Data. *International Journal of Eating Disorders, 39, 346-349.*

Tiggemann, M., & Boundy, M. (2008). Effect of environment and appearance compliment on college women's self-objectification, mood, body shame, and cognitive performance. Psychology of Women Quarterly, 32(4), 399-405.

Tiggemann, M., & Lacey, C. (2009). Shopping for clothes: Body satisfaction, appearance investment, and functions of clothing among female shoppers. *Body Image*, *6*(4), 285-291.

Tiggemann, M., & Slater, A. (2015). The role of self-objectification in the mental health of early adolescent girls: Predictors and consequences. *Journal of pediatric psychology*, jsv021.

Van den Berg, P., Wertheim, E. H., Thompson, J. K., & Paxton, S. J. (2002). Development of body image, eating disturbance, and general psychological functioning in adolescent females: A replication using covariance structure modeling in an Australian sample. *International Journal of Eating Disorders*, *32*(1), 46-51.

Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. Journal of consulting and clinical psychology, 33(4), 448.

Williamson, D. A., Muller, S. L., Reas, D. L., & Thaw, J. M. (1999). Cognitive bias in eating disorders: Implications for theory and treatment. *Behavior Modification*, *23*(4), 556-577.

Wood, K. C., Becker, J. A., & Thompson, J. K. (1996). Body image dissatisfaction in preadolescent children. Journal of Applied Developmental Psychology, 17(1), 85-100.

APPENDIX A

THE BELIEFS ABOUT APPEARANCE QUESTIONNAIRE (ASI-R)

The statements below are beliefs that people may or may not have about their physical appearance and the influence of appearance on life. Decide the extent to which you personally **disagree or agree** with each statement and enter a number from 1 to 5. There are no right or wrong answers. Just be truthful about your personal beliefs.

1	**2**	**3**	**4**	**5**
Strongly Disagree	**Mostly Disagree**	**Neither Agree or Disagree**	**Mostly Agree**	**Strongly Agree**

_____ 1. I spend little time on my physical appearance.

_____ 2. When I see good-looking people, I wonder about how my own looks measure up.

_____ 3. I try to be as physically attractive as I can be.

_____ 4. I have never paid much attention to what I look like.

_____ 5. I seldom compare my appearance to that of other people I see.

_____ 6. I often check my appearance in a mirror just to make sure I look okay.

_____ 7. When something makes me feel good or bad about my looks, I tend to dwell on it.

_____ 8. If I like how I look on a given day, it's easy to feel happy about other things.

_____ 9. If somebody had a negative reaction to what I look like, it wouldn't bother me.

_____ 10. When it comes to my physical appearance, I have high standards.

_____ 11. My physical appearance has had little influence on my life.

_____ 12. Dressing well is not a priority for me.

_____ 13. When I meet people for the first time, I wonder what they think about how I look.

_____ 14. In my everyday life, lots of things happen that make me think about what I look like.

1	2	3	4	5
Strongly Disagree	**Mostly Disagree**	**Neither Agree or Disagree**	**Mostly Agree**	**Strongly Agree**

_____ 15. If I dislike how I look on a given day, it's hard to feel happy about other things.

_____ 16. I fantasize about what it would be like to be better looking than I am.

_____ 17. Before going out, I make sure that I look as good as I possibly can.

_____ 18. What I look like is an important part of who I am.

_____ 19. By controlling my appearance, I can control many of the social and emotional events in my life.

_____ 20. My appearance is responsible for much of what's happened to me in my life.

APPENDIX B

VERBAL COMMENTARY ON PHYSICAL APPEARANCE SCALE (VCOPAS)

Sometimes, people say things that affect how we feel and think about our appearance. The following is a list of comments that may have been made about you. Please read each item and rate how often you think you have been the recipient of such a comment or similar comment (using the scale provided, *never* to *always*).

If you rate an item as 1, then go directly to the next item. However, if you rate an item as 2, 3, 4, or 5, please also rate how that comment made you feel (using the scale provided, *very positive* to *very negative*).

Rate the items based on your exposure to the following comments within the past **<u>2 YEARS</u>**.

1. Your outfit looks great on you.	1	2	3	4	5
	Never		Sometimes		Always
1a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
2. You need to start watching what you eat.	1	2	3	4	5
	Never		Sometimes		Always
2a. How did this comment make your feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
3. You are pretty.	1	2	3	4	5
	Never		Sometimes		Always
3a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
4. I wish I had a body like yours.	1	2	3	4	5
	Never		Sometimes		Always
4a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
5. You've gained weight.	1	2	3		
	Never		Sometimes		Always
5a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
6.You are in great shape.	1	2	3	4	5
	Never		Sometimes		Always
6a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
7. Don't you think you've eaten enough already?	1	2	3	4	5
	Never		Sometimes		Always
7a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
8. You're looking kind of skinny.	1	2	3	4	5
	Never		Sometimes		Always
8a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative

9. Your facial skin looks good.	1	2	3	4	5
	Never		Sometimes		Always
9a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
10. You shouldn't eat so late at night.	1	2	3	4	5
	Never		Sometimes		Always
10a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
11. You have pretty eyes.	1	2	3	4	5
	Never		Sometimes		Always
11a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
12. You need to start exercising to lose weight.	1	2	3	4	5
	Never		Sometimes		Always
12a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
13. You have nice abs (abdominals).	1	2	3	4	5
	Never		Sometimes		Always
13a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
14. Have you considered going on a diet?	1	2	3	4	5
	Never		Sometimes		Always
14a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
15. You have a beautiful smile.	1	2	3	4	5
	Never		Sometimes		Always
15a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
16. Your outfit makes you look fat.	1	2	3	4	5
	Never		Sometimes		Always
16a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
17. I really like how those jeans fit you.	1	2	3	4	5
	Never		Sometimes		Always
17a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
18. Are you sure you want to eat such fattening foods?	1	2	3	4	5
	Never		Sometimes		Always
18a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
19. Have you gained weight?	1	2	3	4	5
	Never		Sometimes		Always
19a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
20. Your hair looks really good.	1	2	3	4	5
	Never		Sometimes		Always

20a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative
21. You have a nice body	1	2	3	4	5
	Never		Sometimes		Always
21a. How did this comment make you feel?	1	2	3	4	5
	Very Positive		Neutral		Very Negative

APPENDIX C

MBSRQ-AE

Instructions: Using the scale below, please circle the number that best matches your agreement with the following statements.

Definitely Disagree	Mostly Disagree	Neither agree nor disagree	Mostly agree	Definitely agree
1	2	3	4	5

1. My body is sexually appealing.	1	2	3	4	5
2. I like my looks just the way they are.	1	2	3	4	5
3. Most people would consider me good looking.	1	2	3	4	5
4. I like the way I look without my clothes.	1	2	3	4	5
5. I like the way my clothes fit me.	1	2	3	4	5
6. I dislike my physique.	1	2	3	4	5
7. I'm physically unattractive.	1	2	3	4	5

APPENDIX D

MBSRQ-BASS

Use this 1 to 5 scale to indicate how dissatisfied or satisfied you are with each of the following areas or aspects of your body:

1 Very Dissatisfied	2 Mostly Dissatisfied	3 Neither Satisfied or Dissatisfied	4 Mostly Satisfied	5 Definitely Satisfied

_____ 1. Face (facial features, complexion)
_____ 2. Hair (color, thickness, texture)
_____ 3. Lower torso (buttocks, hips, thighs, legs)
_____ 4. Mid torso (waist, stomach)
_____ 5. Upper torso (chest or breasts, shoulders, arms)
_____ 6. Muscle tone
_____ 7. Weight
_____ 8. Height
_____ 9. Overall appearance

APPENDIX E

EDE–Q

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each questions carefully. Please answer all of the questions.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

	On how many of the past 28 days…	**No days**	**1-5 days**	**6-12 days**	**13-15 days**	**16-22 days**	**23-27 days**	**Every day**
1.	Have you been deliberately *trying* to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2.	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3.	Have you *tried* to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4.	Have you *tried* to follow definite rules regarding your eating (e.g., a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5.	Have you had a definite desire to have an *empty*	0	1	2	3	4	5	6

	stomach with the aim of influencing your shape or weight?							
6.	Have you had a definite desire to have a *totally flat* stomach?	0	1	2	3	4	5	6
7.	Has thinking about *food, eating, or calories* made it very difficult to concentrate on things you are interested in (e.g., working, following a conversation, or reading)?	0	1	2	3	4	5	6
8.	Has thinking about *shape or weight* made it very difficult to concentrate on things you are interested in (e.g., working, following a conversation, or reading)?	0	1	2	3	4	5	6
9.	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10.	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11.	Have you felt fat?	0	1	2	3	4	5	6
12.	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13 – 18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days)…

13. How many *times* have you eaten what other people would regard as an unusually large amount of food (given the circumstances)? _____

14. On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)? _____

15. How many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food *and* have had a sense of loss of control at the time)? _____

16. How many *times* have you made yourself sick (vomit) as a means of controlling your shape or weight? _____

17. How many *times* have you taken laxatives as a means of controlling your shape or weight? _____

18. How many *times* have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories? _____

Questions 19 – 21: Please circle the appropriate number. *Please note that for these questions, the term "binge eating" means* eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19. Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)?

…Do not count episodes of binge eating.

No days	**1-5 days**	**6-12 days**	**13-15 days**	**16-22 days**	**23-27 days**	**Every day**
0	1	2	3	4	5	6

20. On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight?

…Do not count episodes of binge eating.

None of the times	**A few of the times**	**Less than half**	**Half of the times**	**More than half**	**Most of the times**	**Every time**
0	1	2	3	4	5	6

21. Over the past 28 days, how concerned have you been about other people seeing you eat?

…Do not count episodes of binge eating.

Not at all		**Slightly**		**Moderately**		**Markedly**
0	1	2	3	4	5	

Questions 22 – 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

	Over the past 28 days…	**Not at all**		**Slightly**		**Moderately**		**Markedly**
22.	Has your weight influence how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23.	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24.	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	0	1	2	3	4	5	6
25.	How dissatisfied have you been with your weight?	0	1	2	3	4	5	6
26.	How dissatisfied have you been with your shape?	0	1	2	3	4	5	6
27.	How uncomfortable have you felt seeing your body (e.g., seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28.	How uncomfortable have you felt about others seeing your shape or figure (e.g., in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate) _____

What is your height? (Please give your best estimate) _____

If female: Over the past three to four months, have you missed any menstrual periods? _____

- If so, how many? _____
- Have you been taking the “pill”? _____